Common Package Dimensions for CH Series ICs

Version: 3I

https://wch-ic.com

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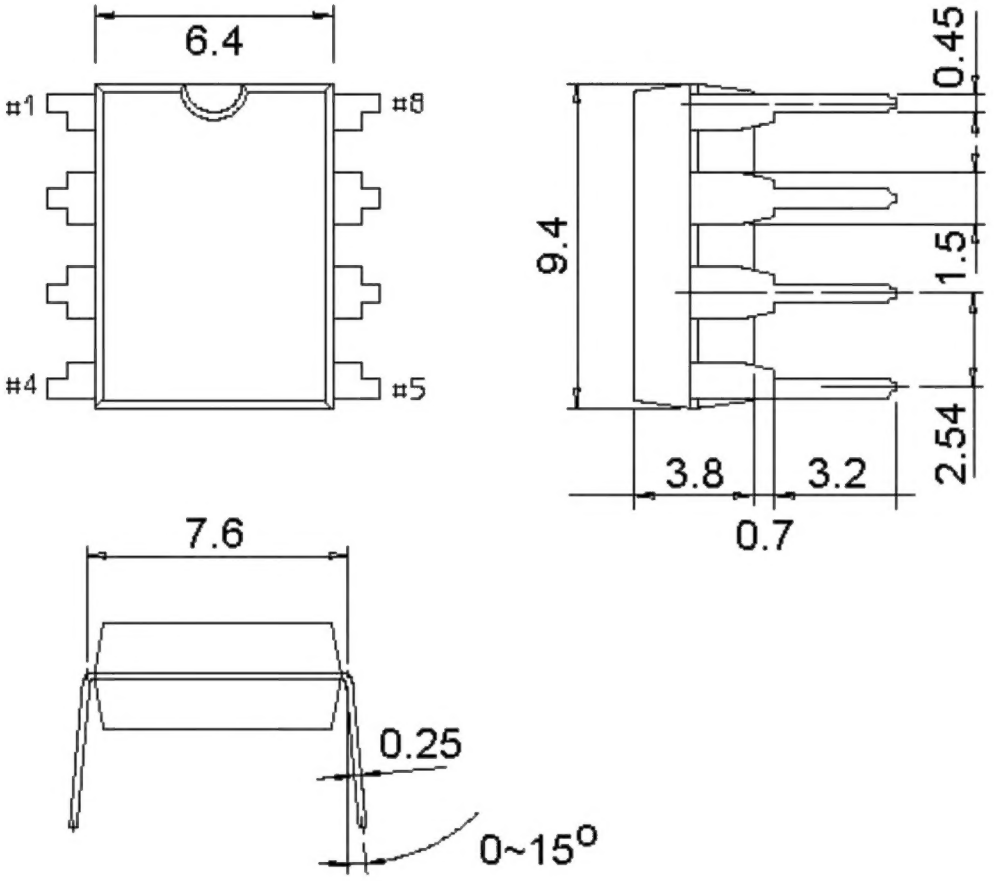
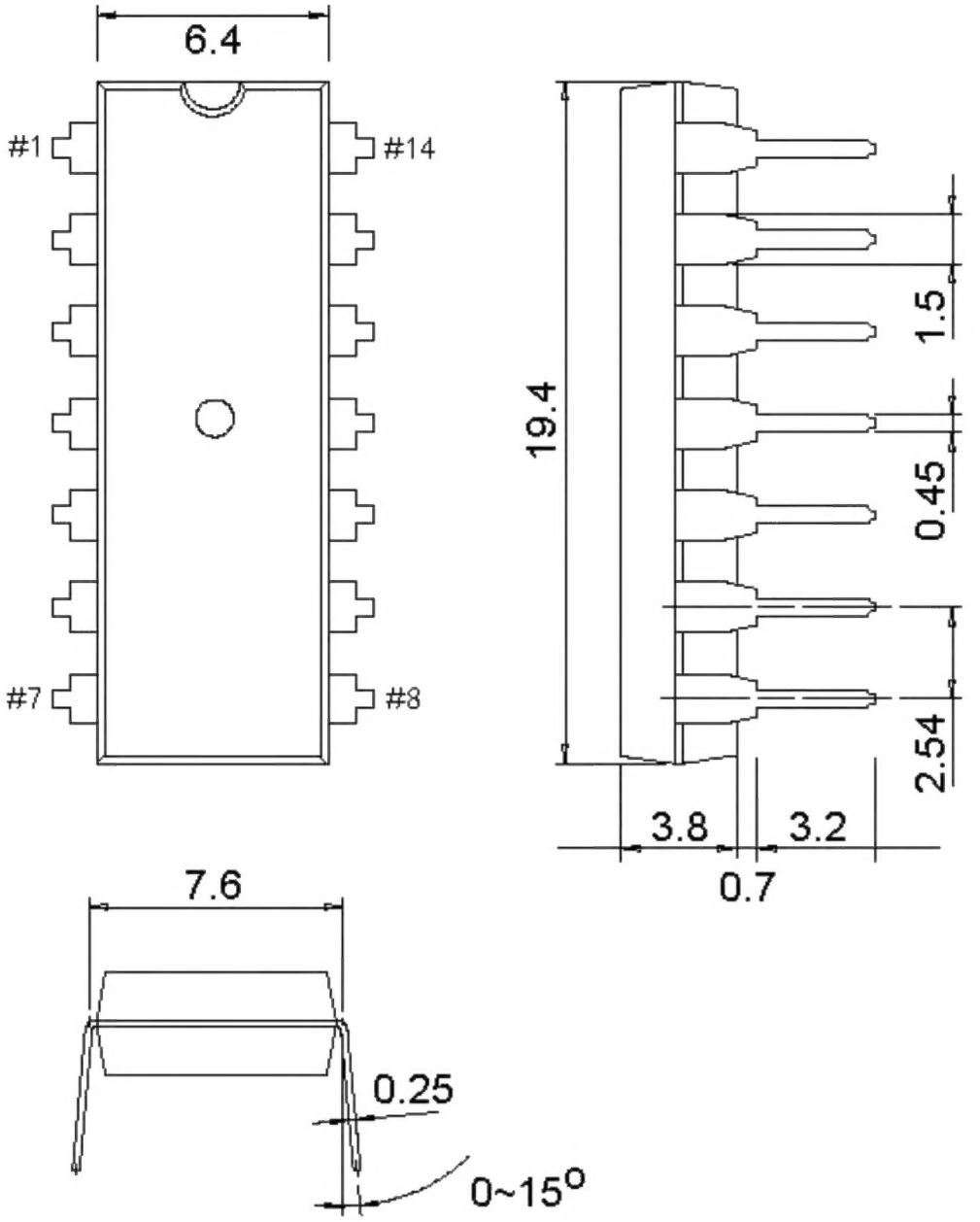
Note: All dimensions are in mm (millimeters),
and the lead center spacing is always a nominal value, with no error value;
other than that, the dimensional error is not greater than ±0.2mm or ±10%, whichever is greater.

DIP Type (PDIP)

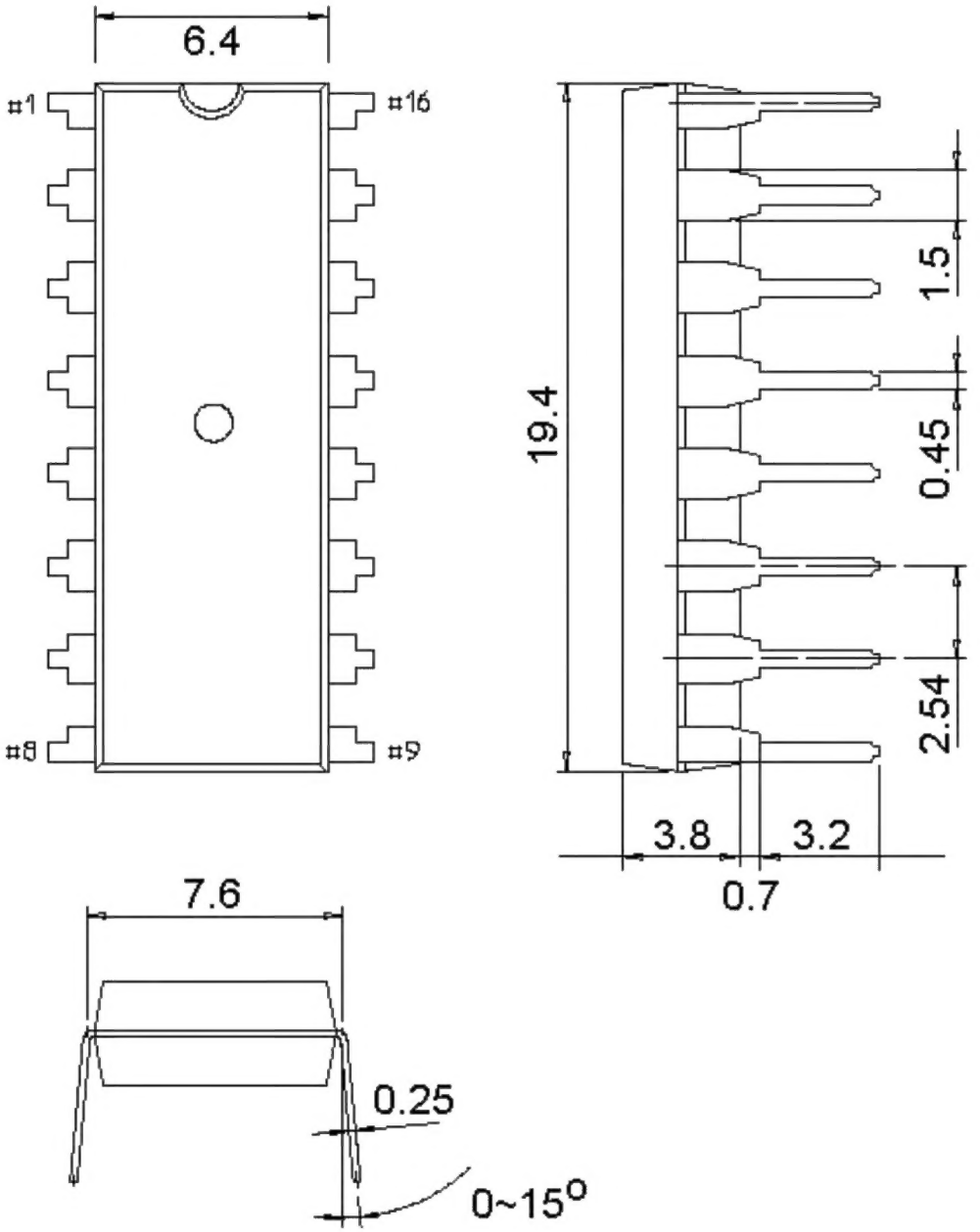
. **DIP8**



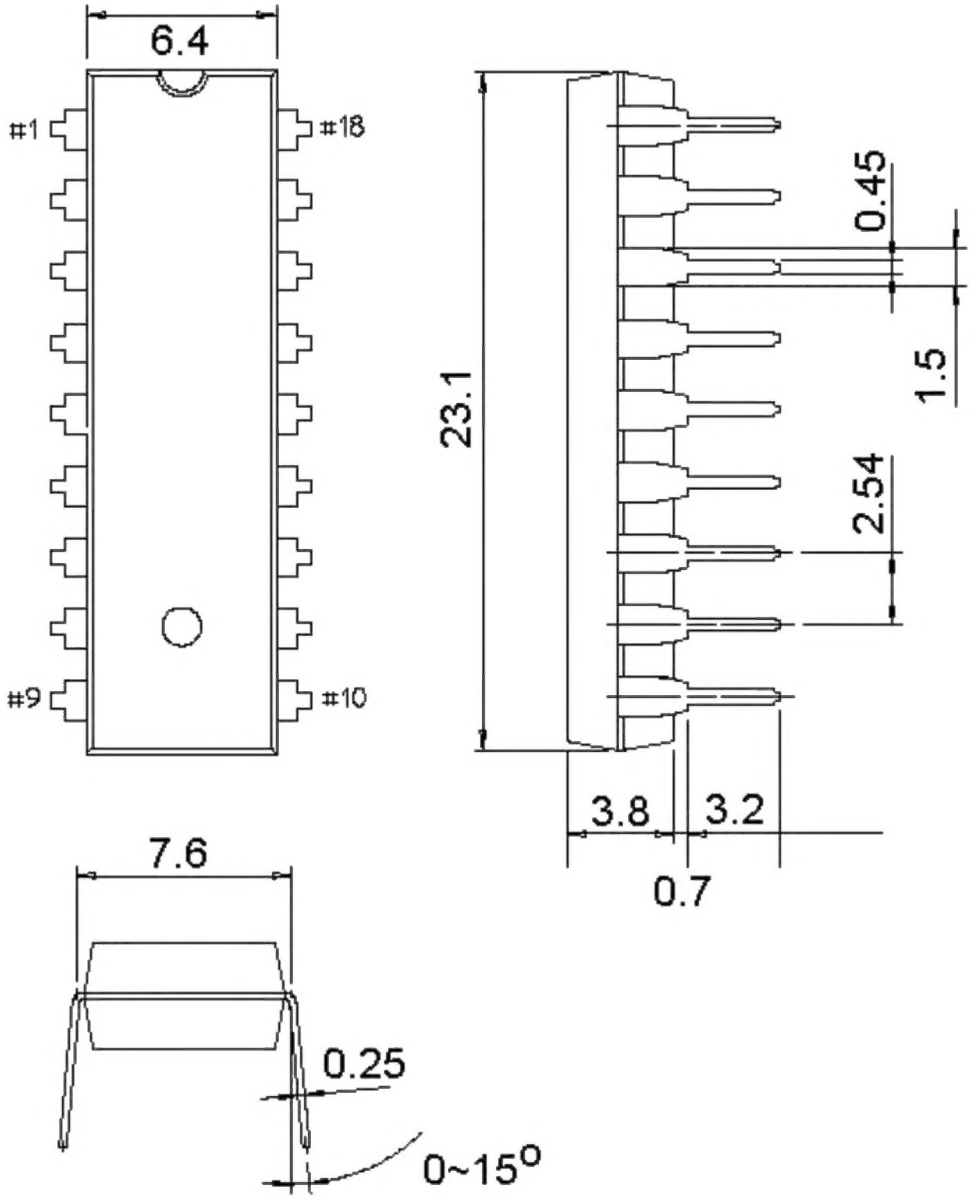
. **DIP14**



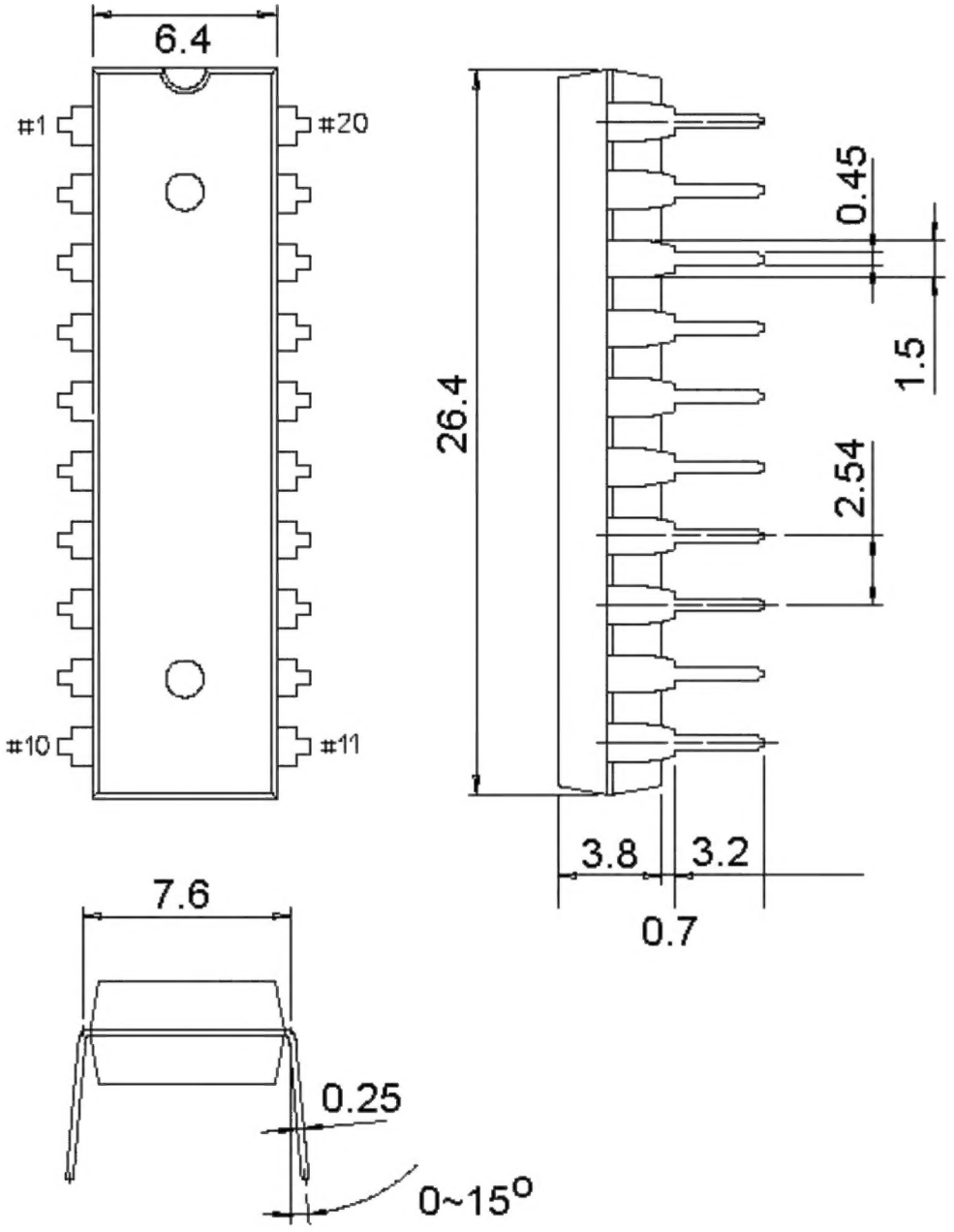
. **DIP16**



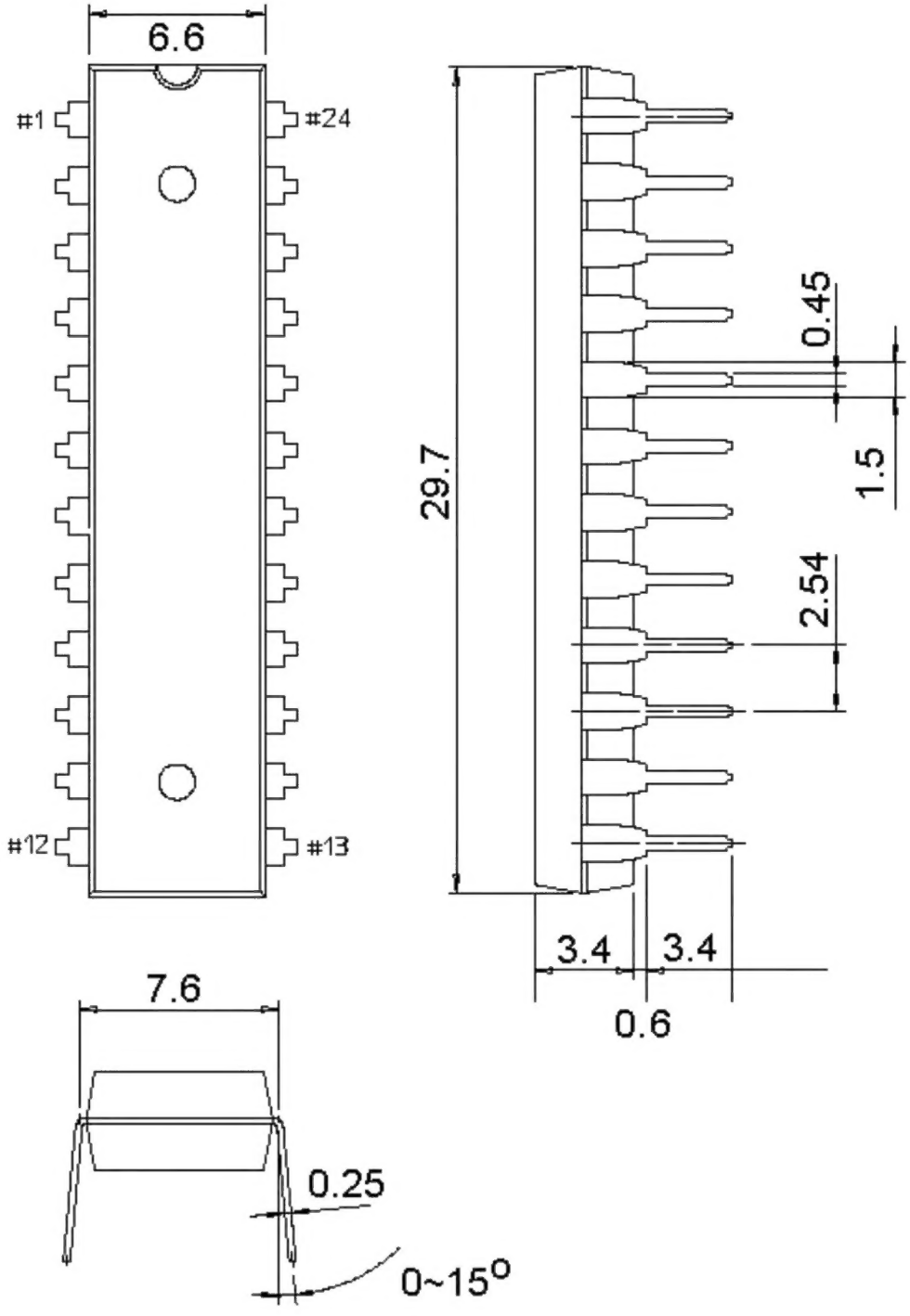
. **DIP18**



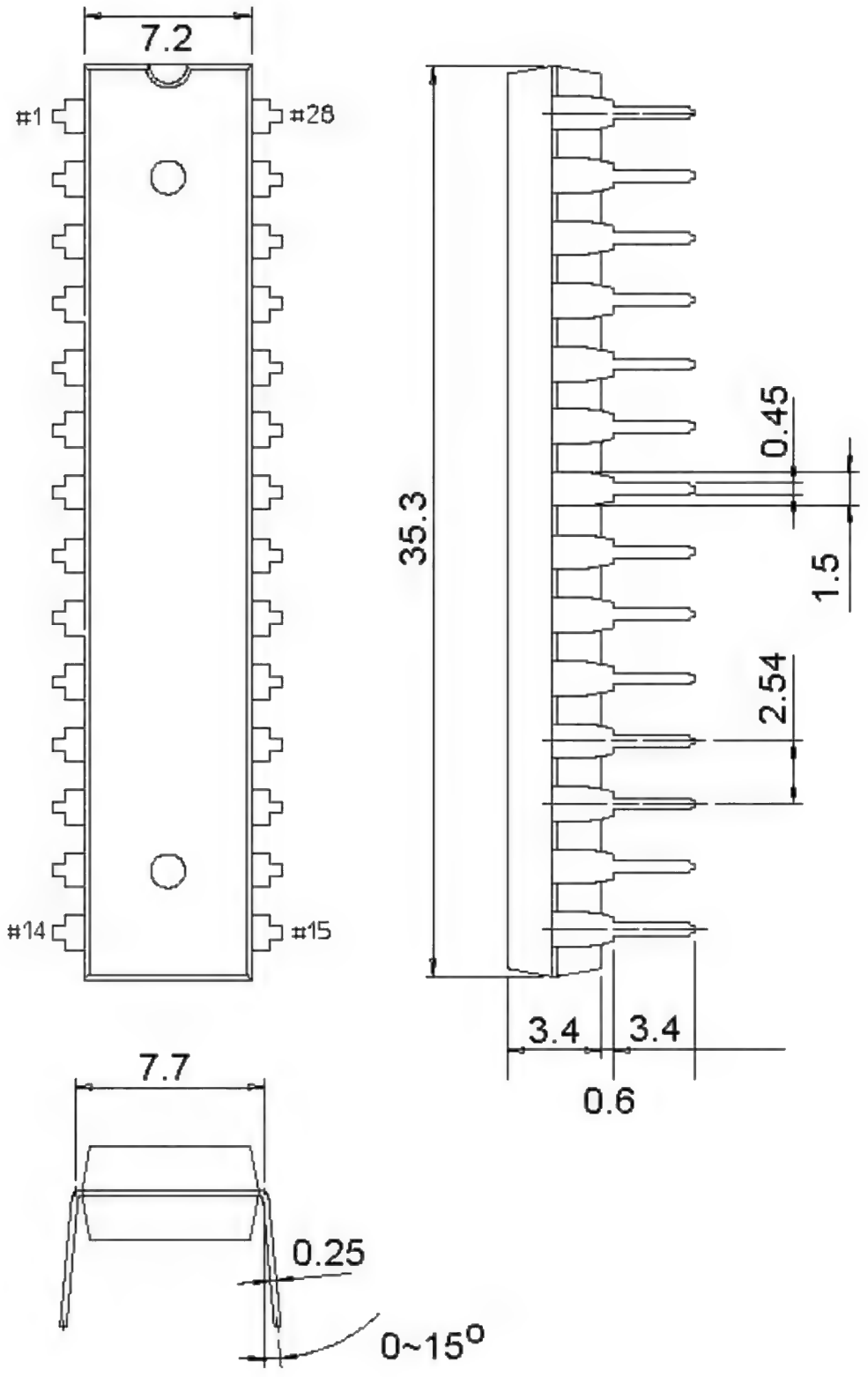
. **DIP20**



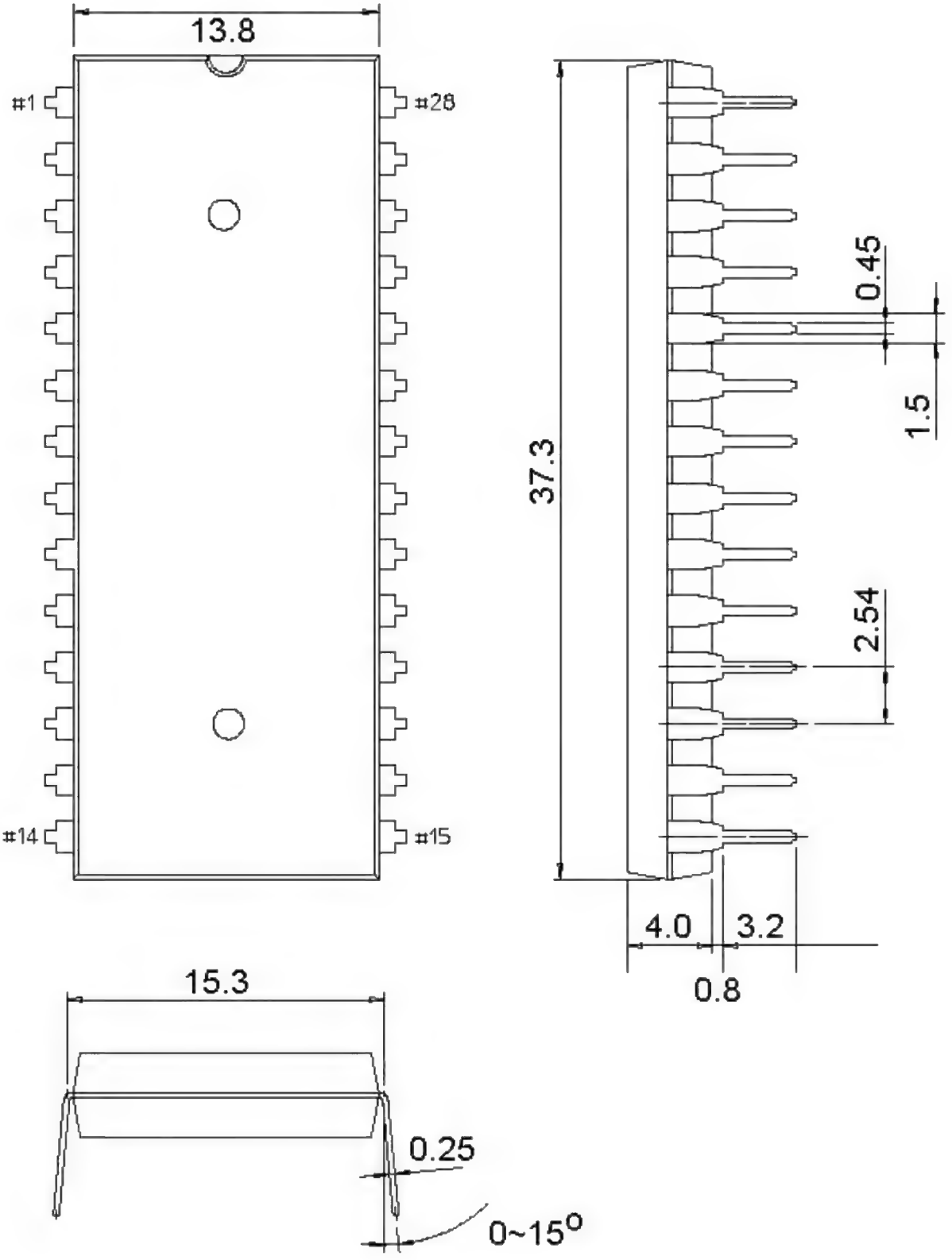
. **DIP24S (SKDIP24, DIP24-300mil)**



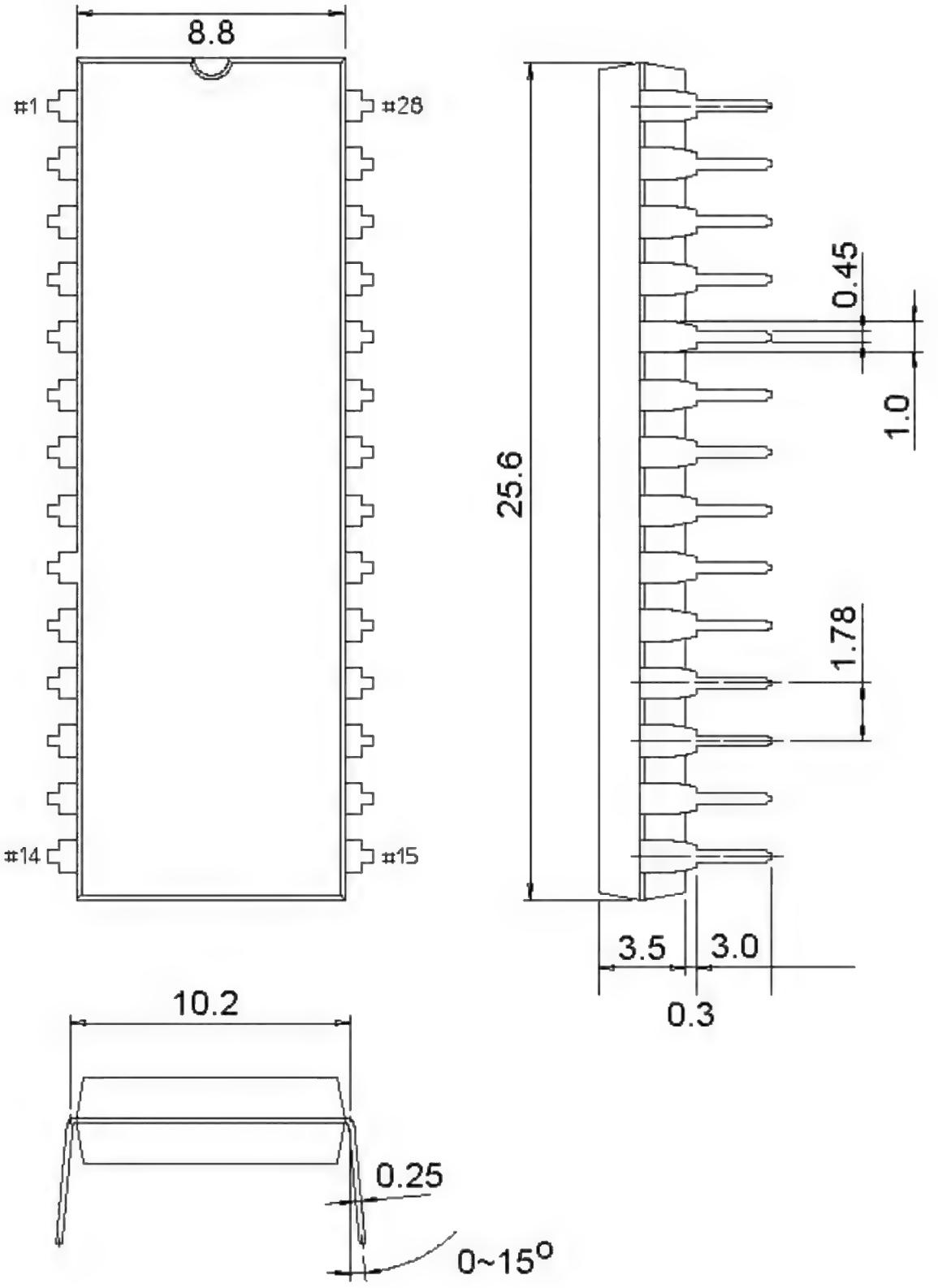
. **DIP28S (SKDIP28、DIP28-300mil)**



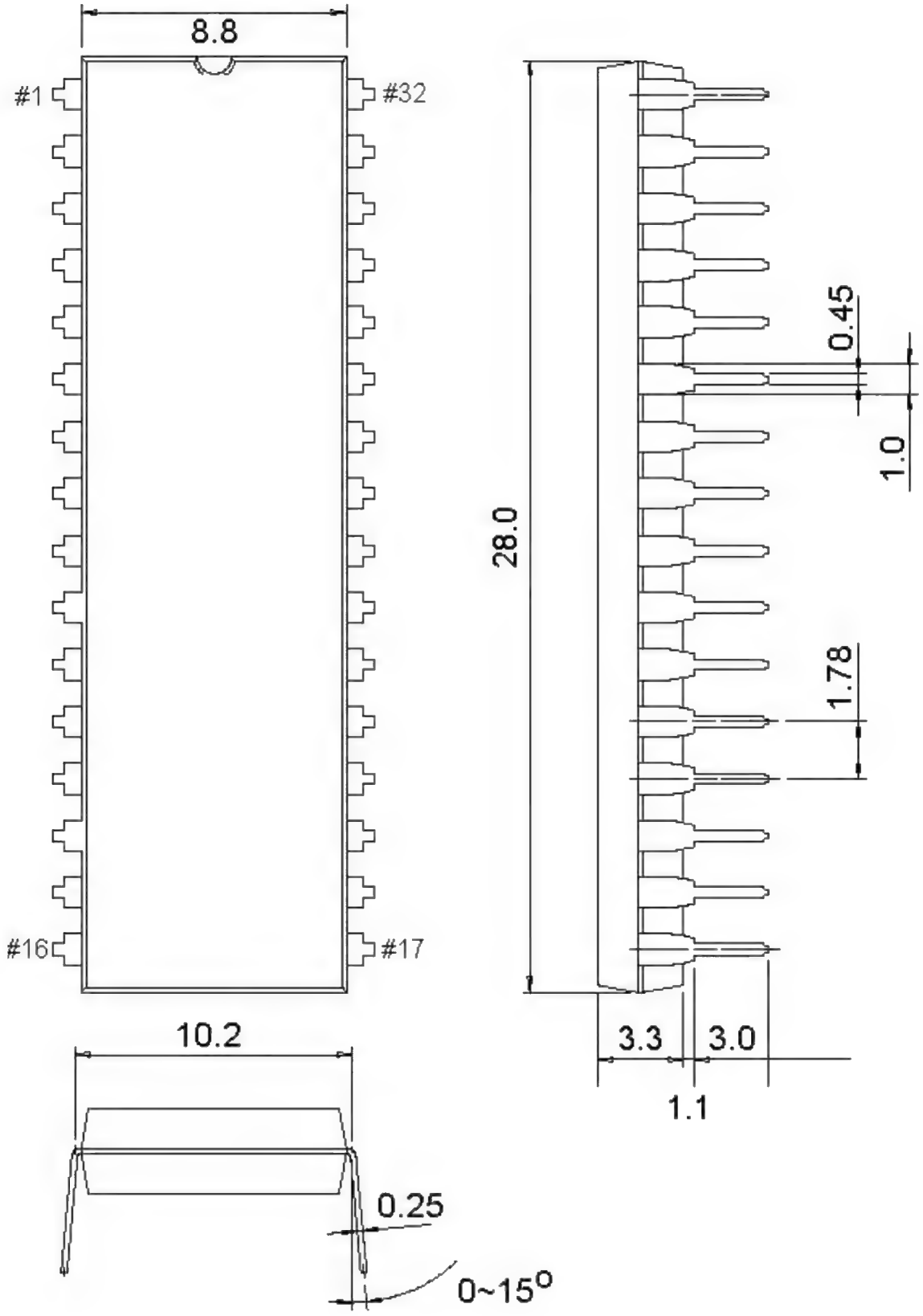
. **DIP28 (DIP28W, DIP28-600mil)**



. **SDIP28 (SDIP28-400mil)**



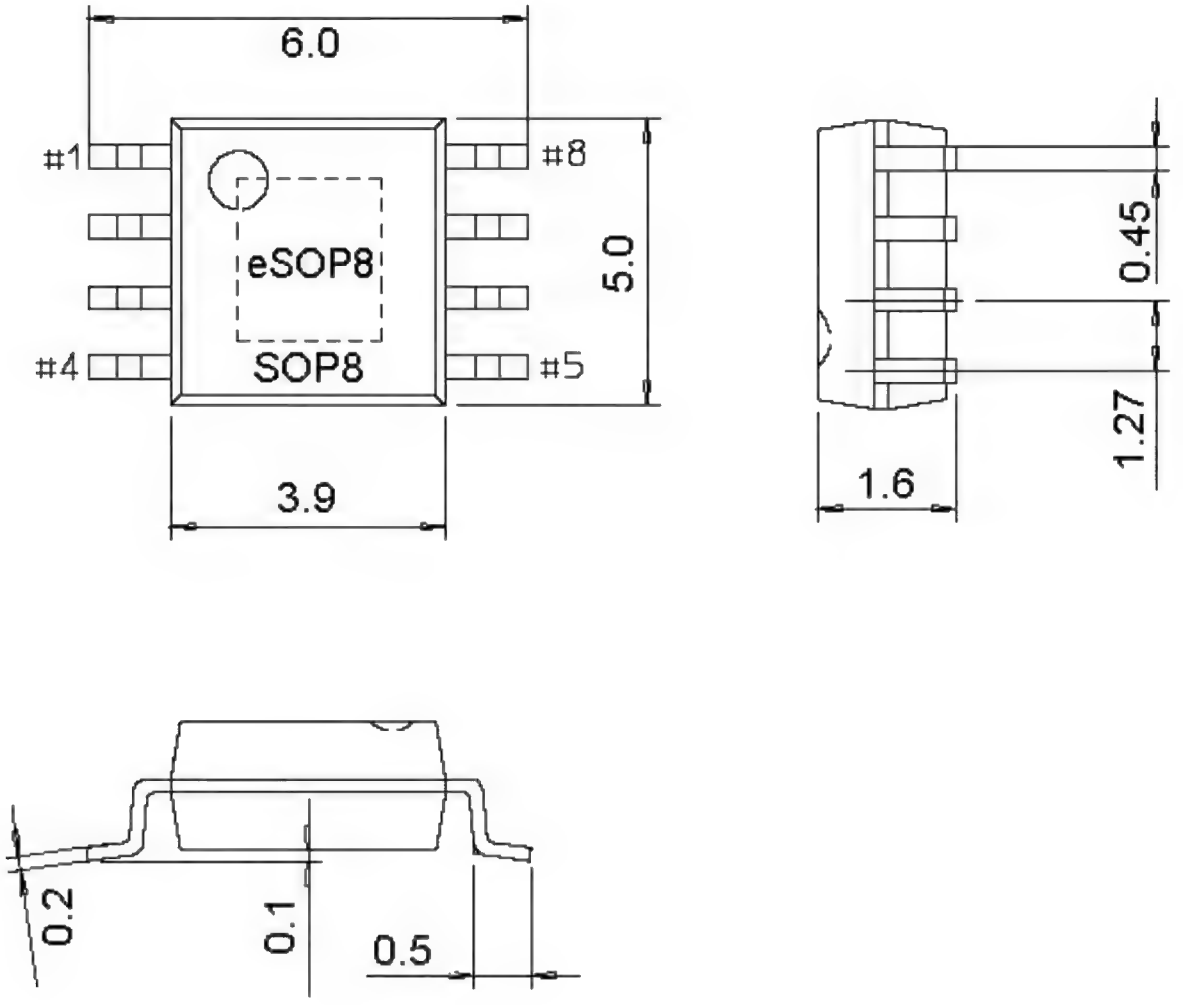
. **SDIP32 (SDIP32-400mil)**



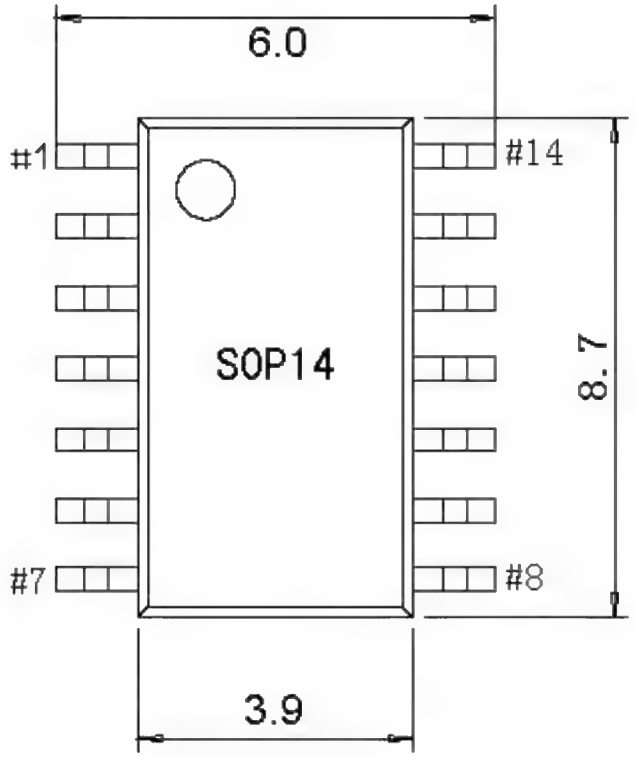
SOP Type (SOIC)

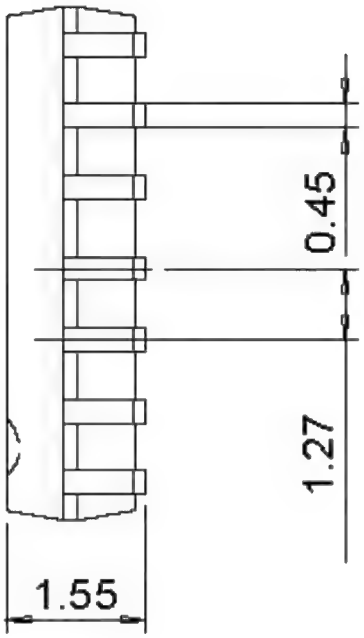
. SOP8, eSOP8

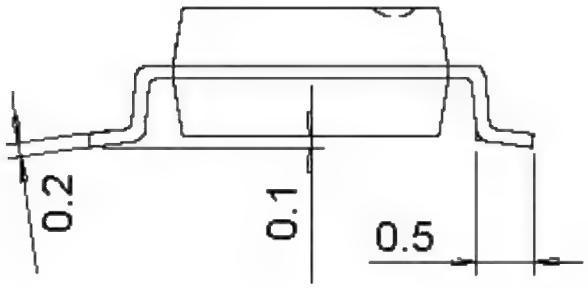
eSOP8 Exposed Pad: 2.1*3.3, 2.1*2.1



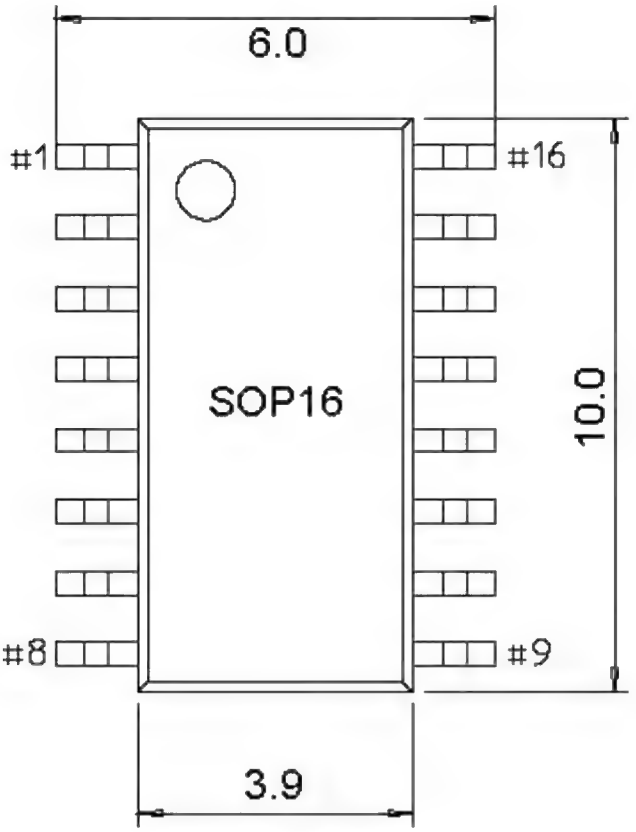
. **SOP14**

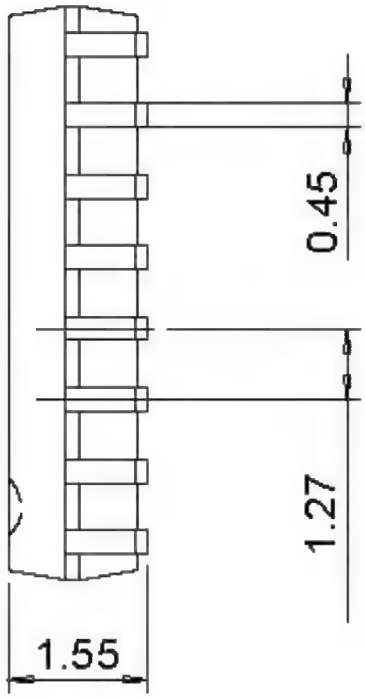


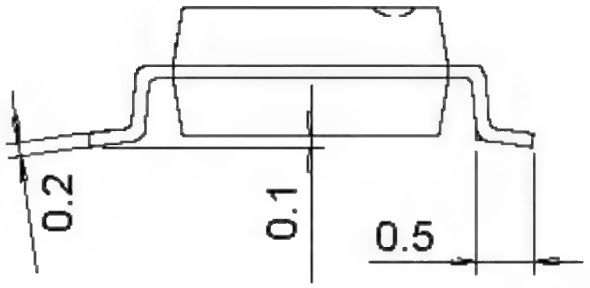




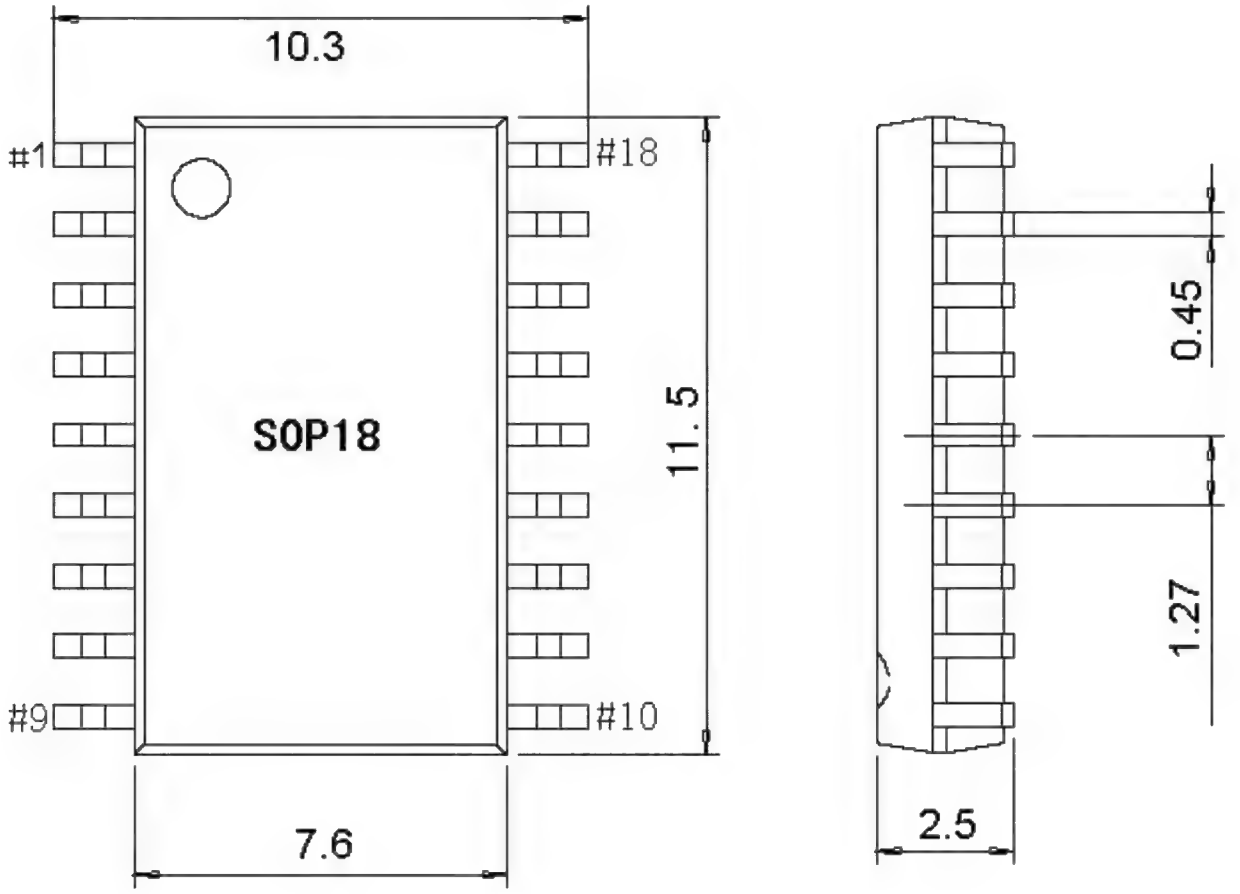
. **SOP16 (SOP16-150mil)**

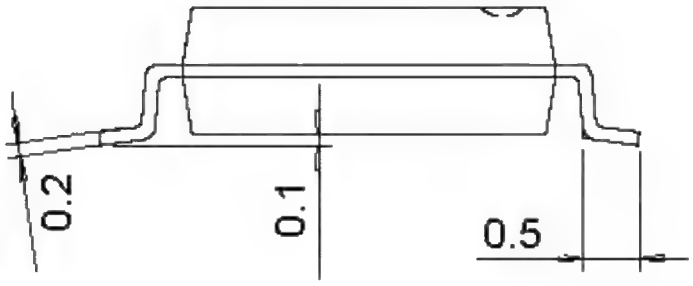




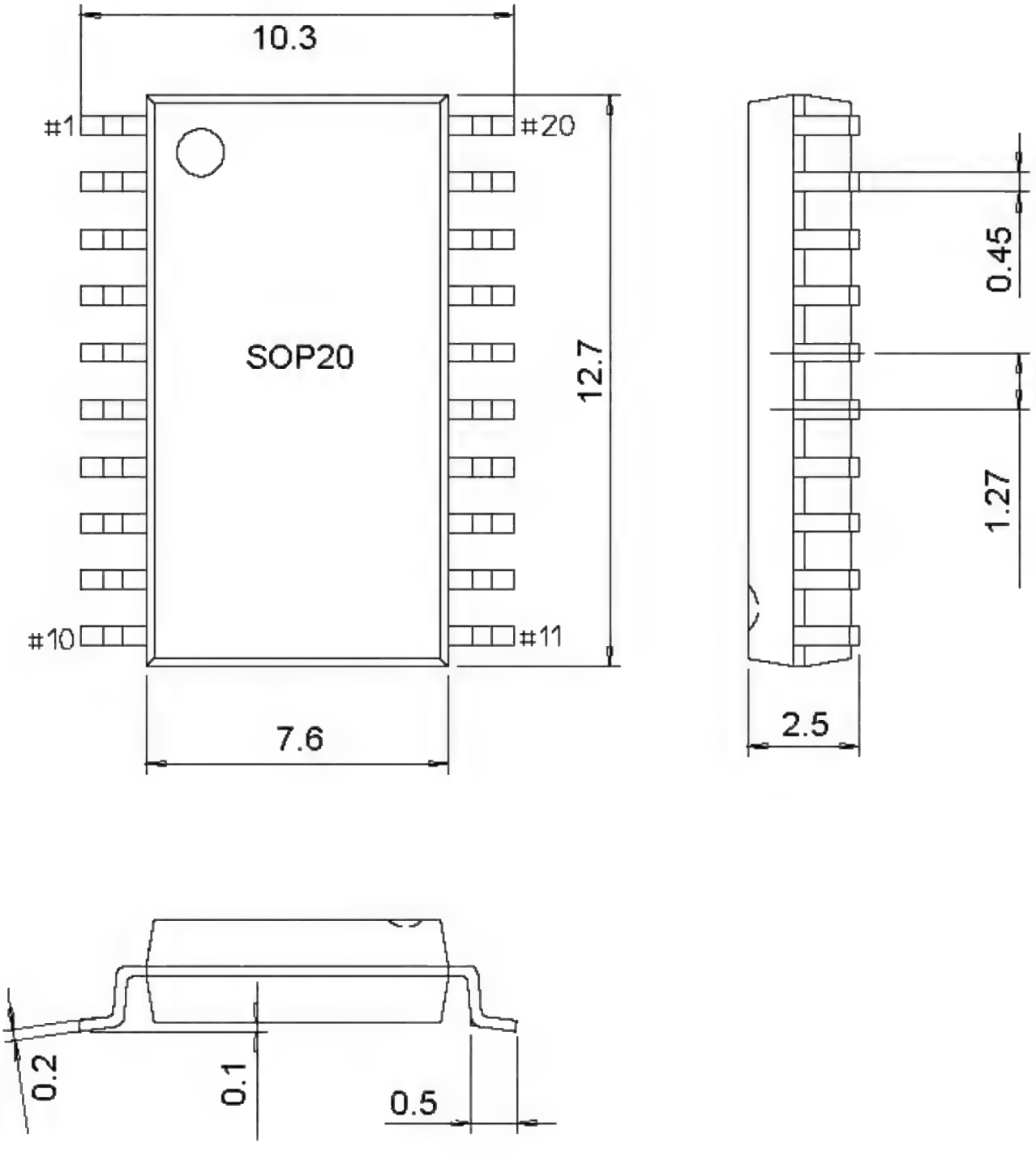


. **SOP18**

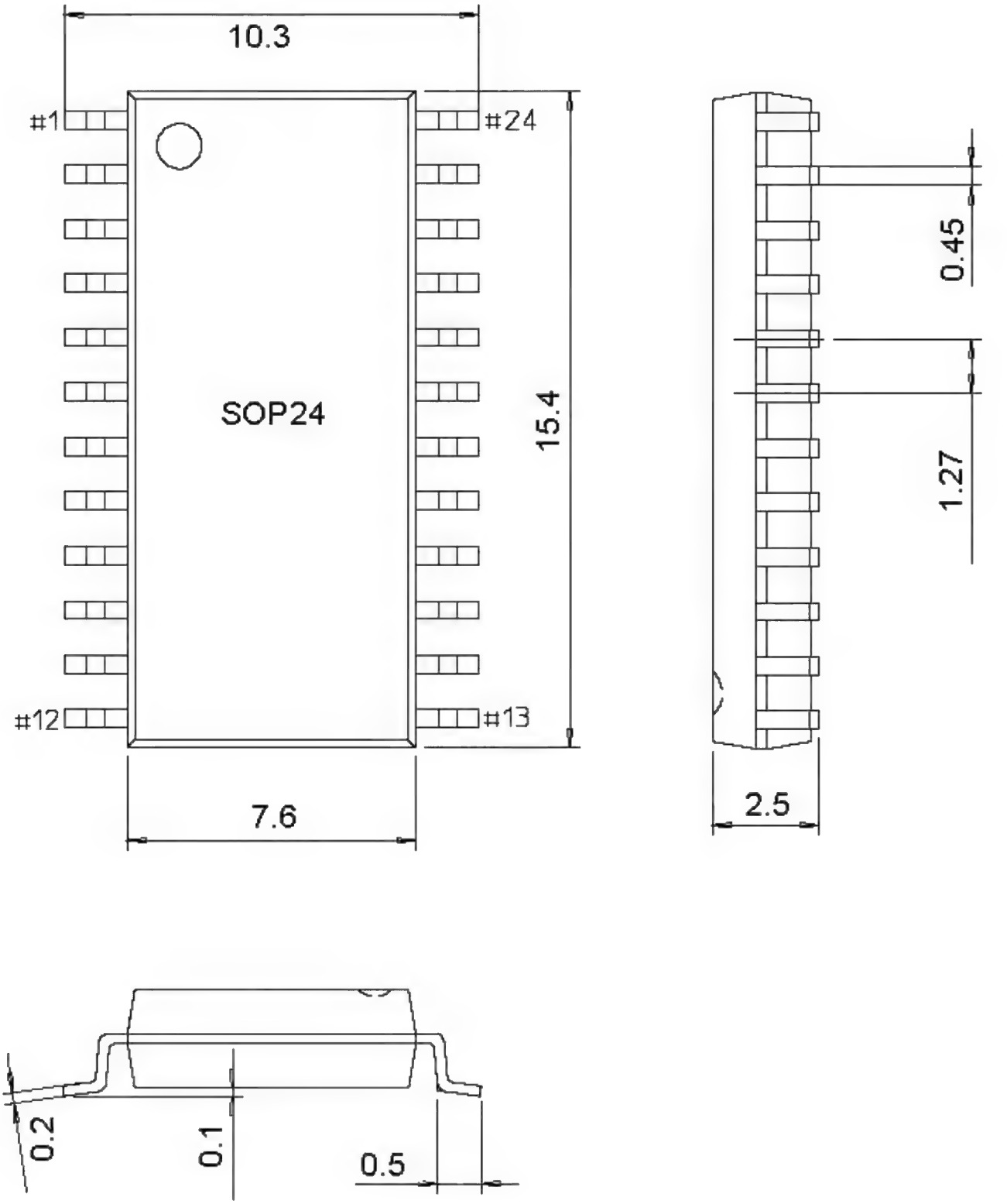




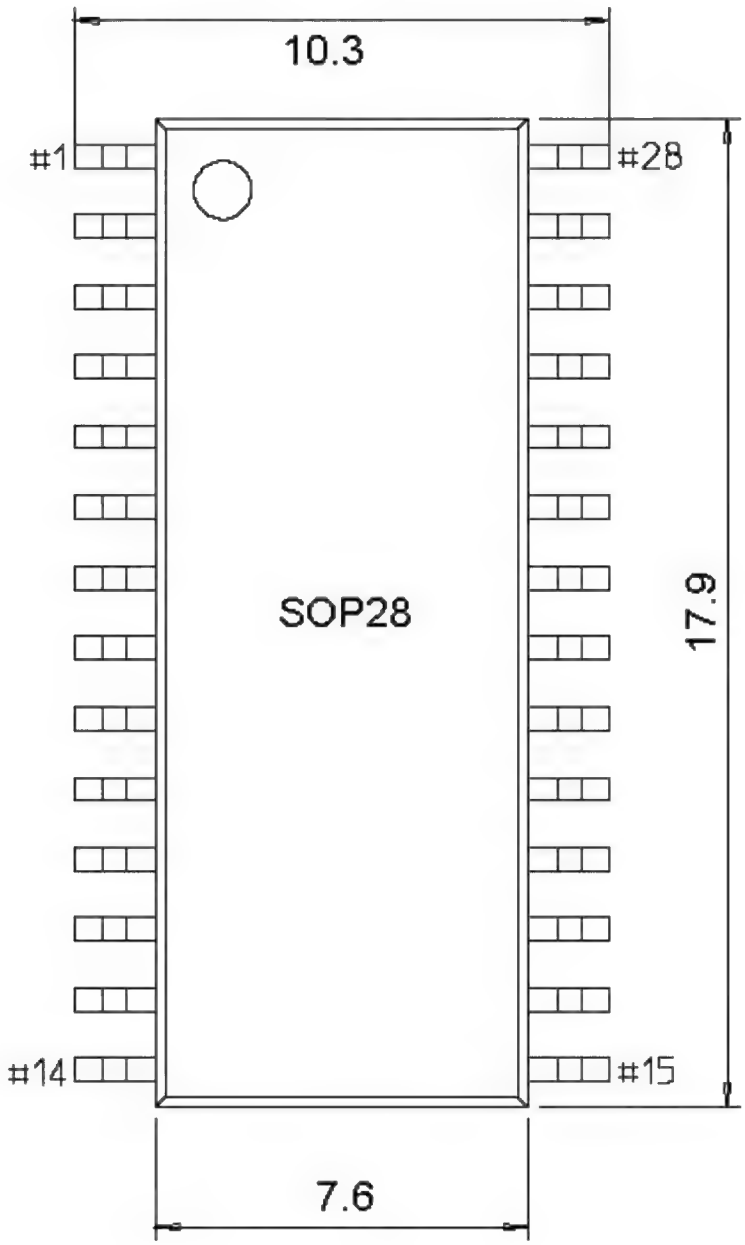
. **SOP20**

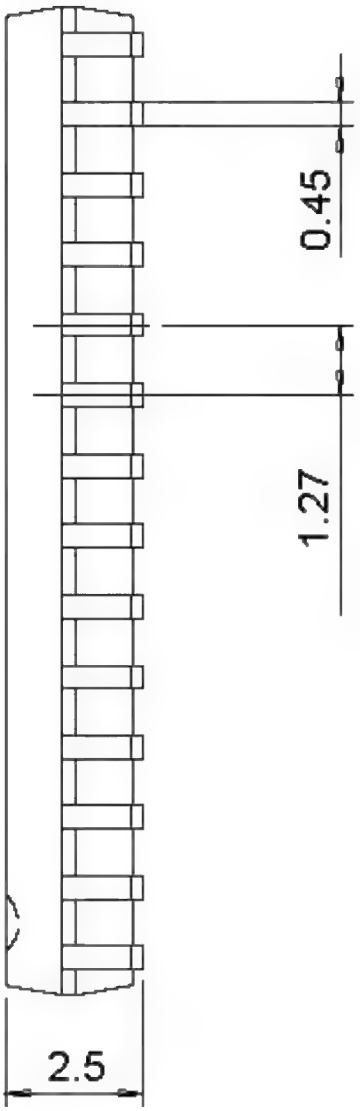


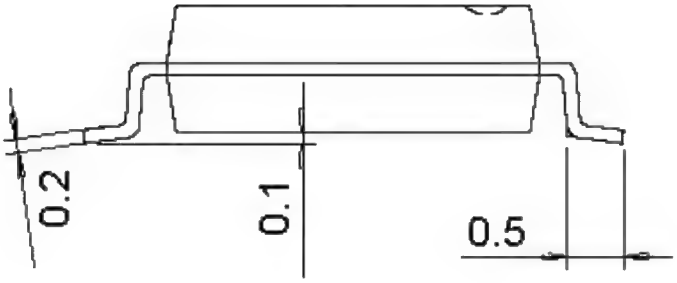
. **SOP24**



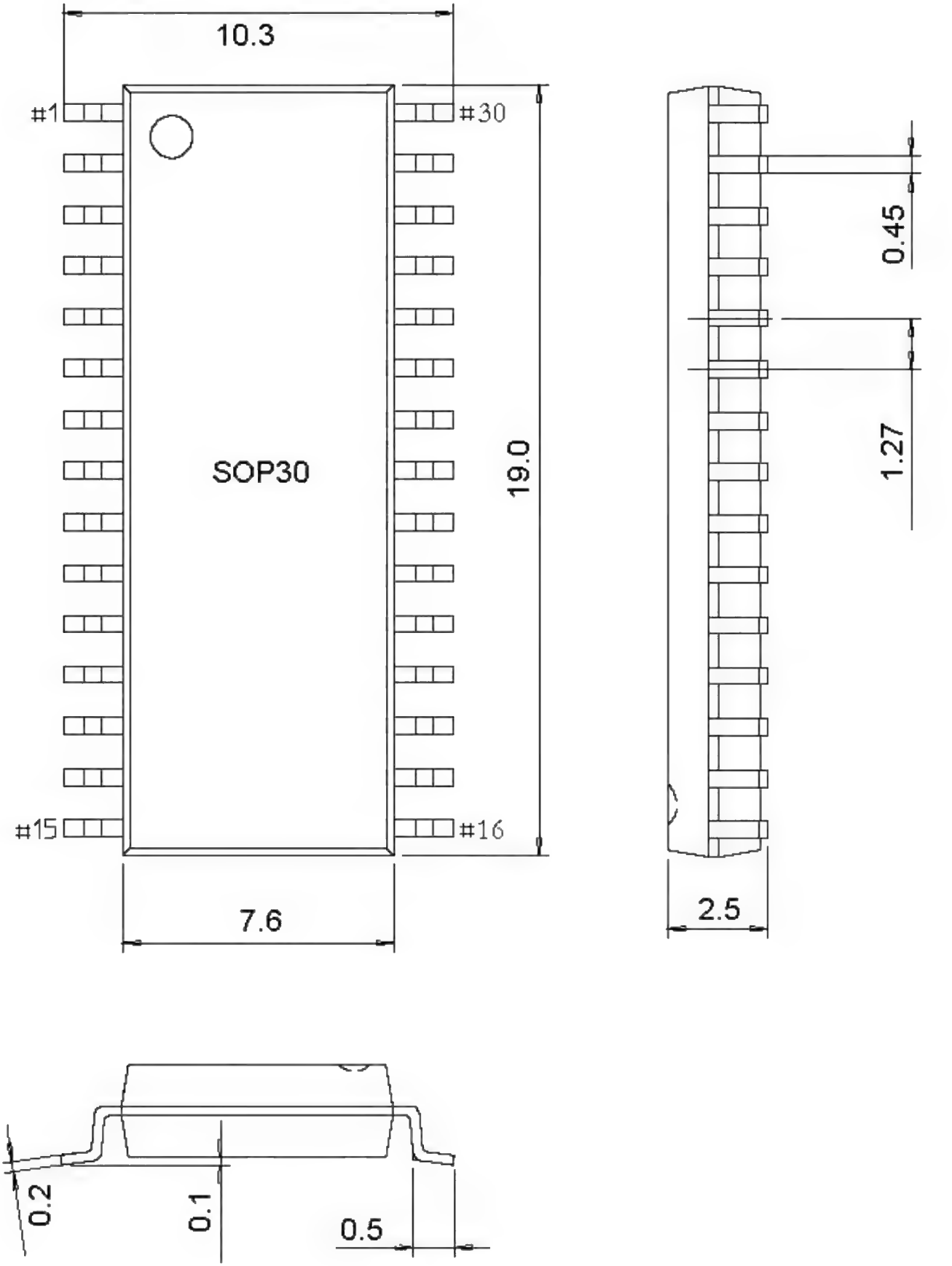
. **SOP28**







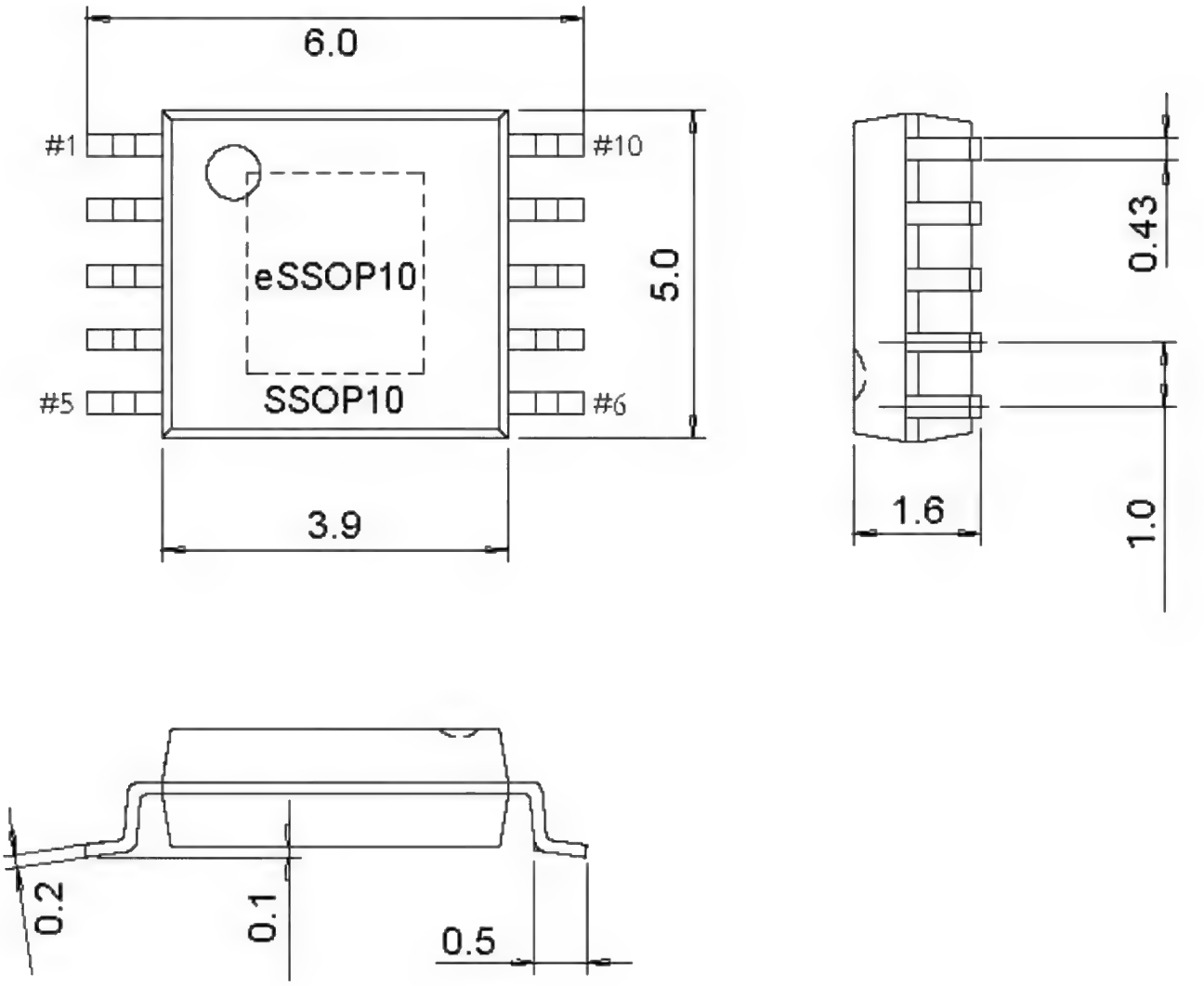
. **SOP30**



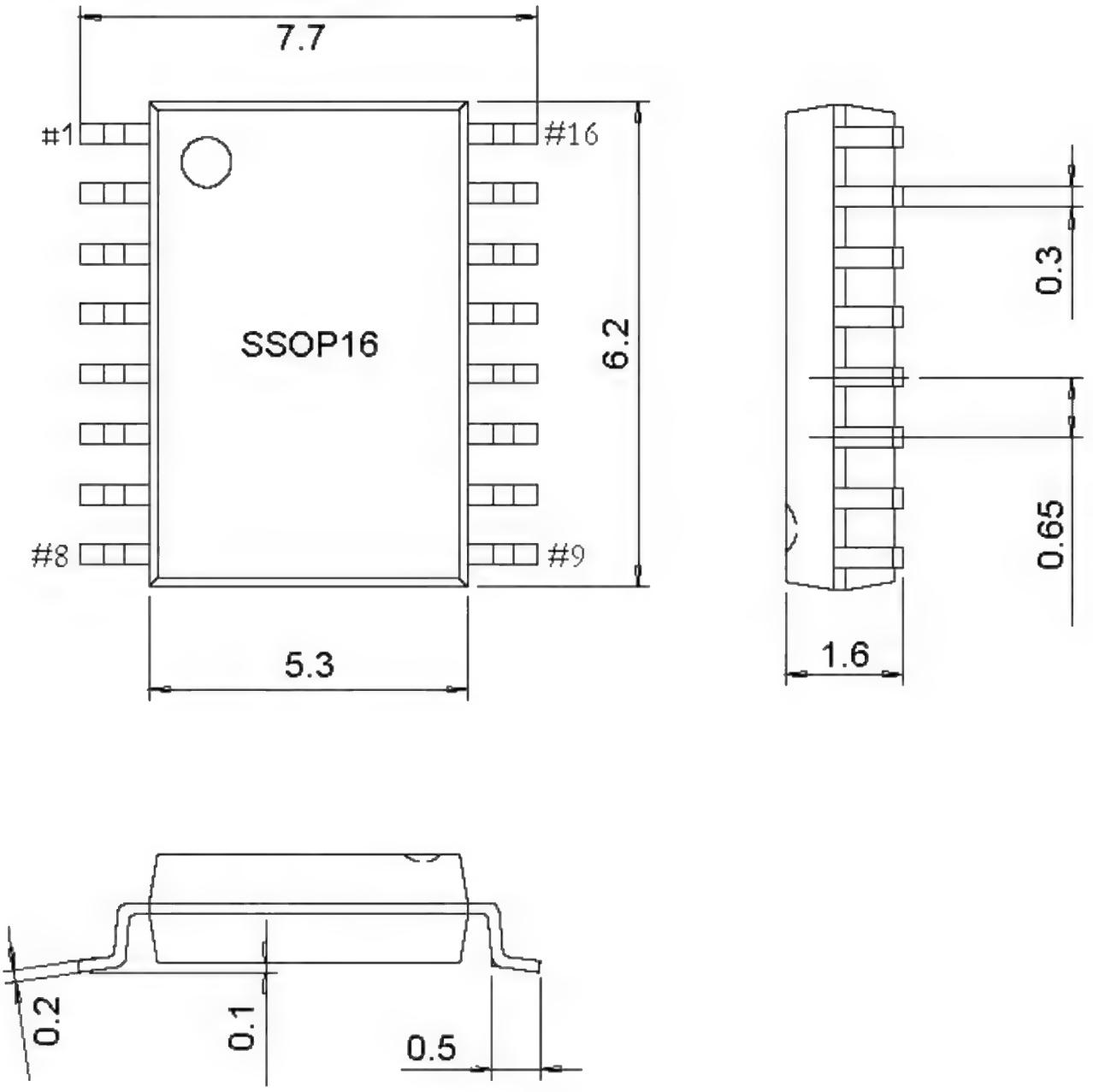
SSOP Type

. SSOP10 (SSOP10-150mil-1.00), eSSOP10

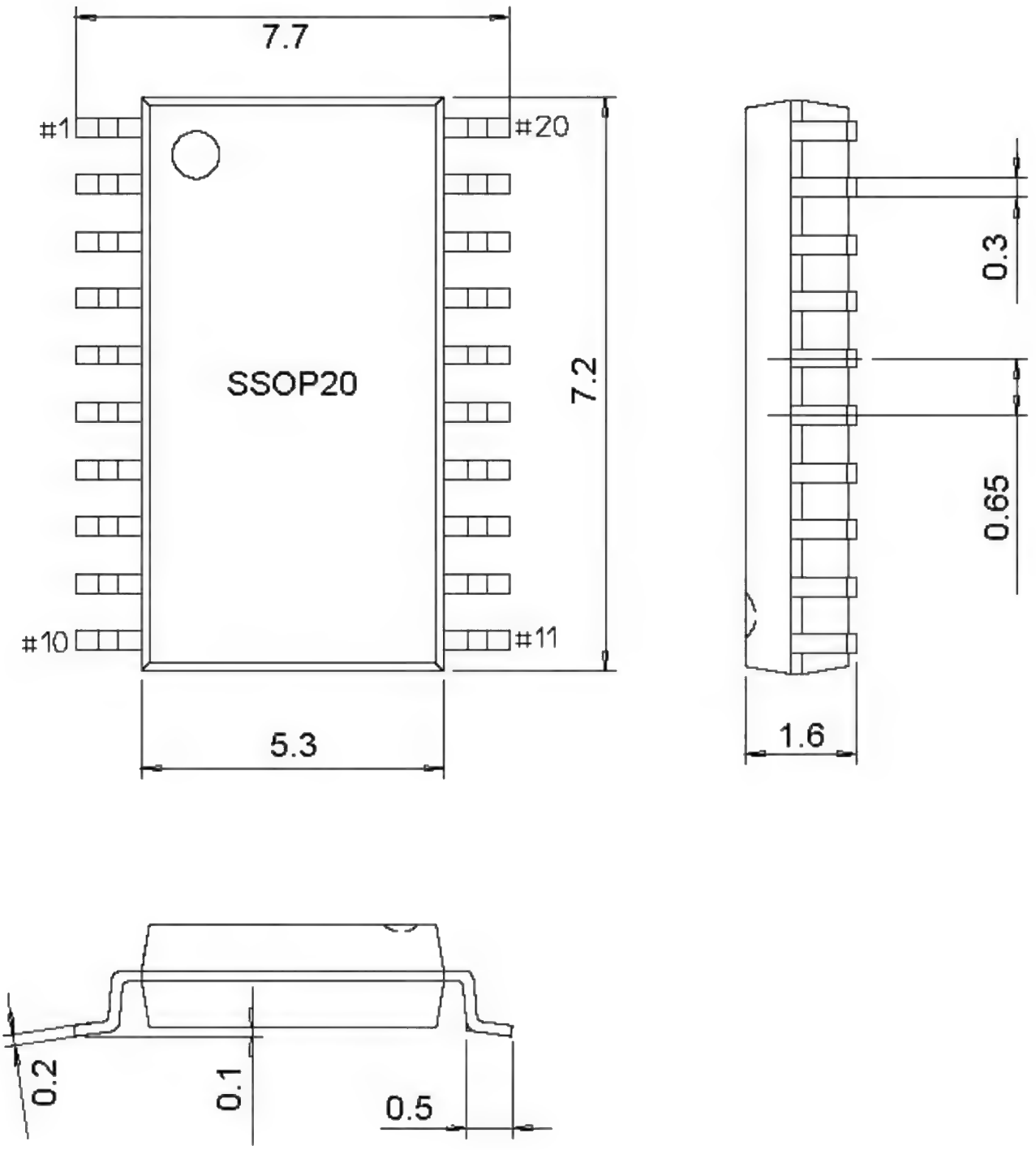
eSSOP10 Exposed Pad: 2.1*3.3



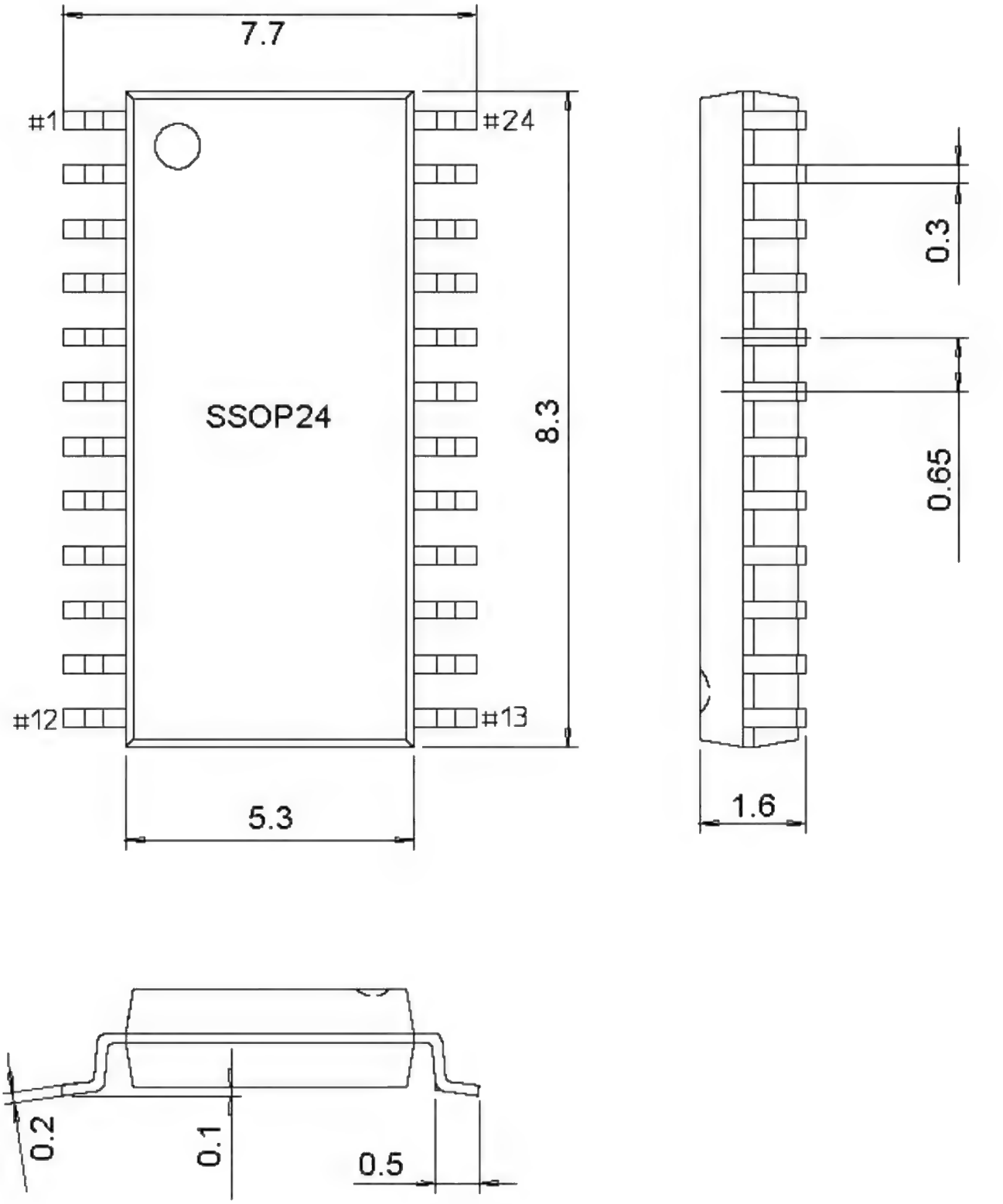
. **SSOP16 (SSOP16-209mil-0.65)**



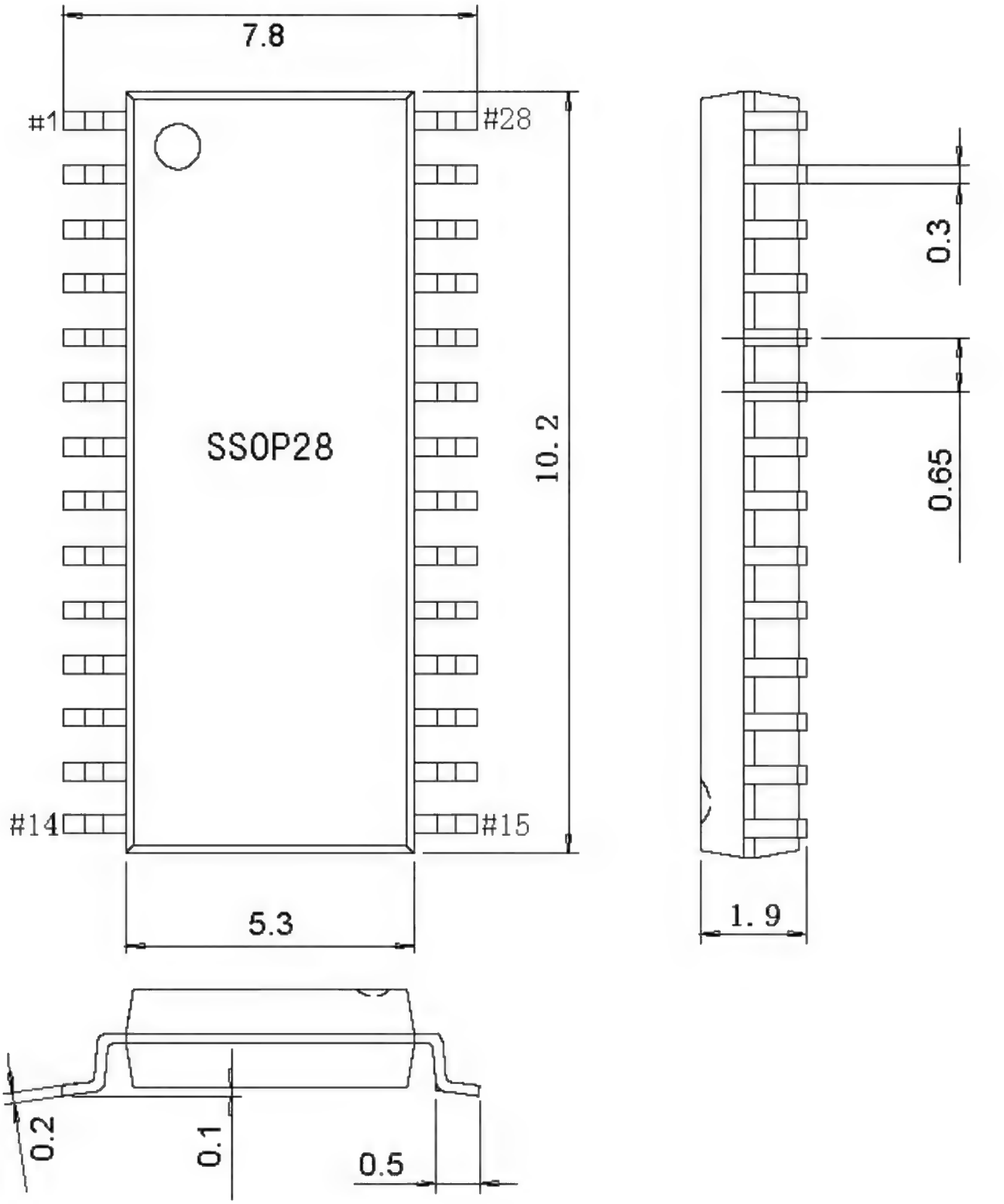
. **SSOP20 (SSOP20-209mil-0.65)**



. **SSOP24 (SSOP24-209mil-0.65)**

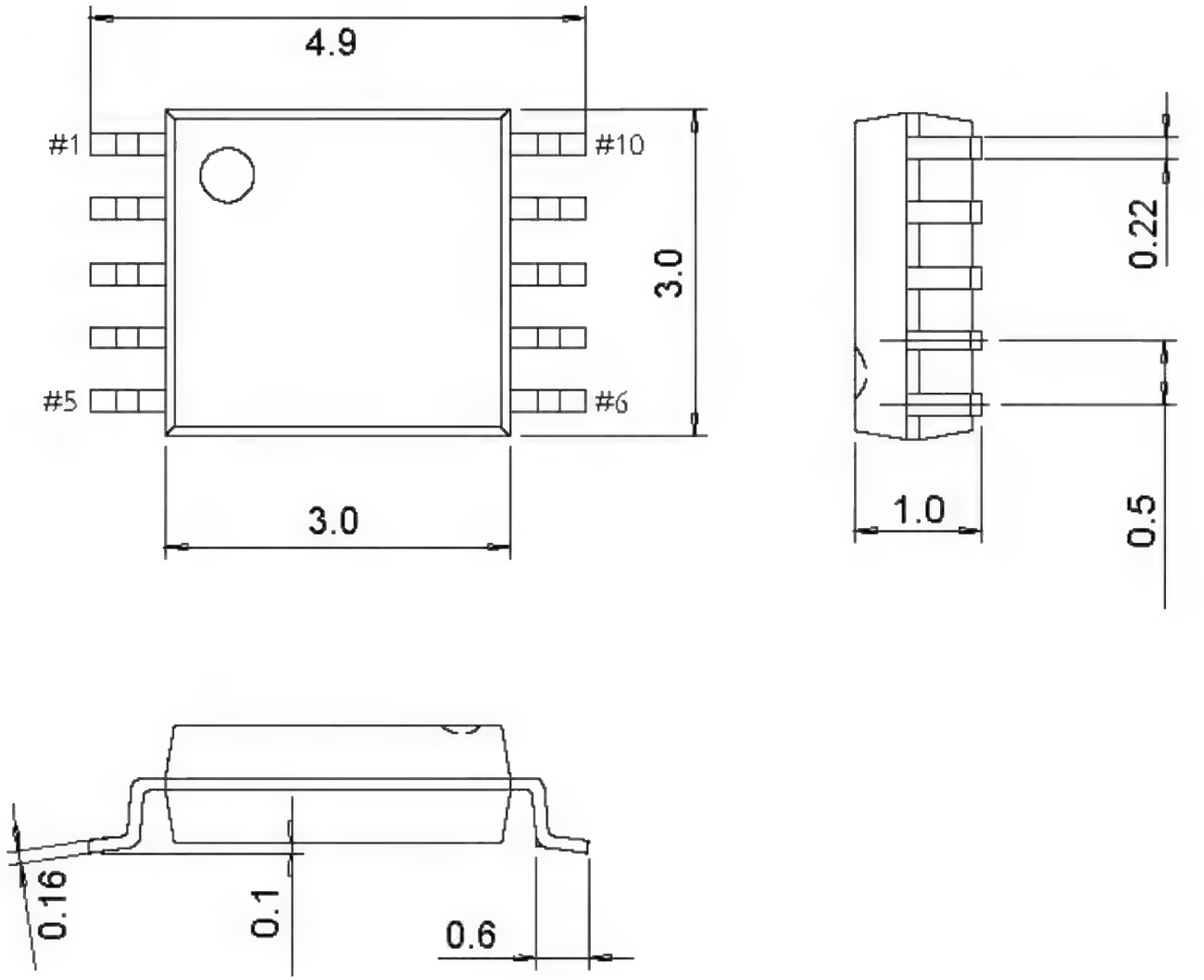


. **SSOP28 (SSOP28-209mil-0.65)**



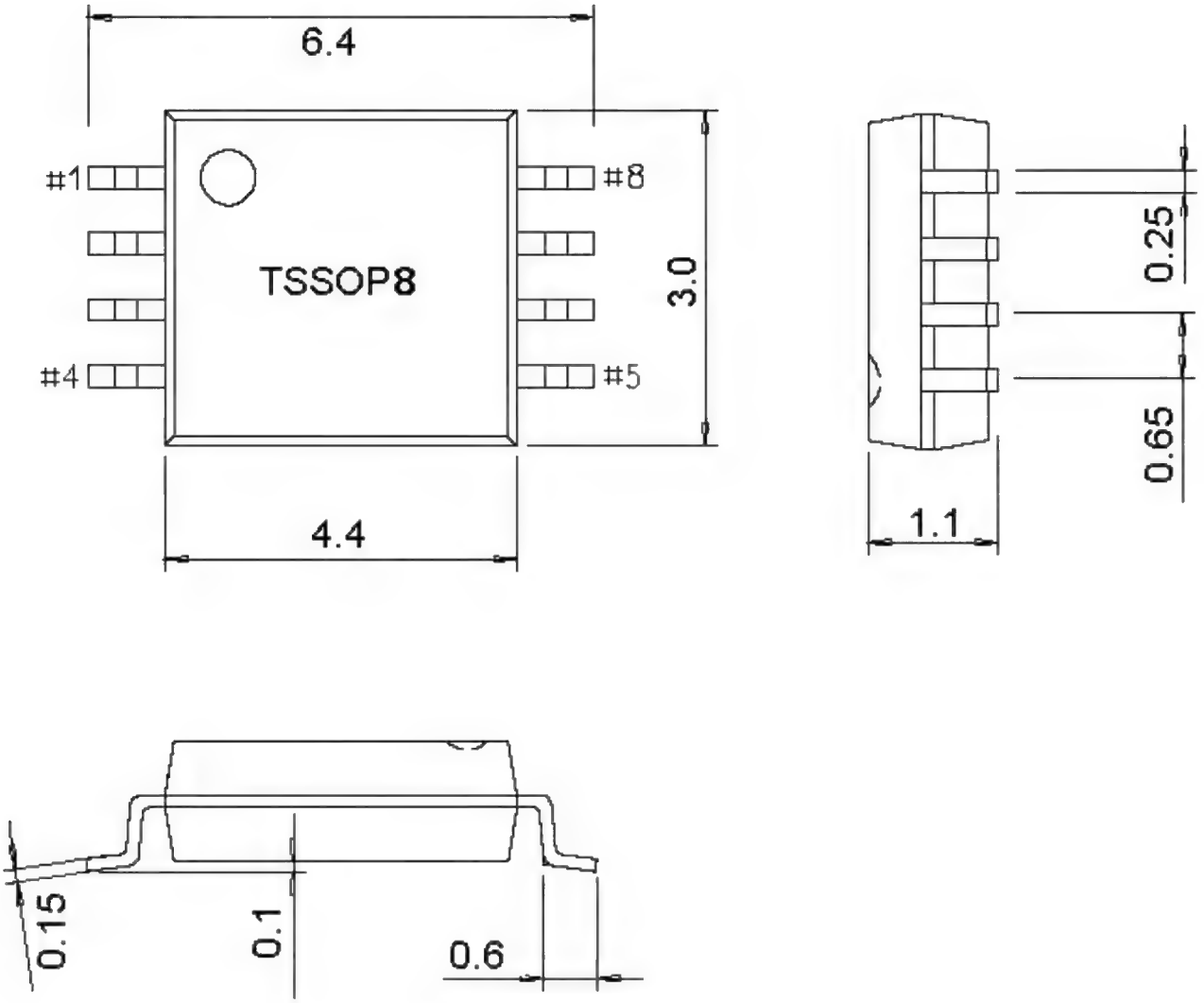
MSOP Type

. MSOP10



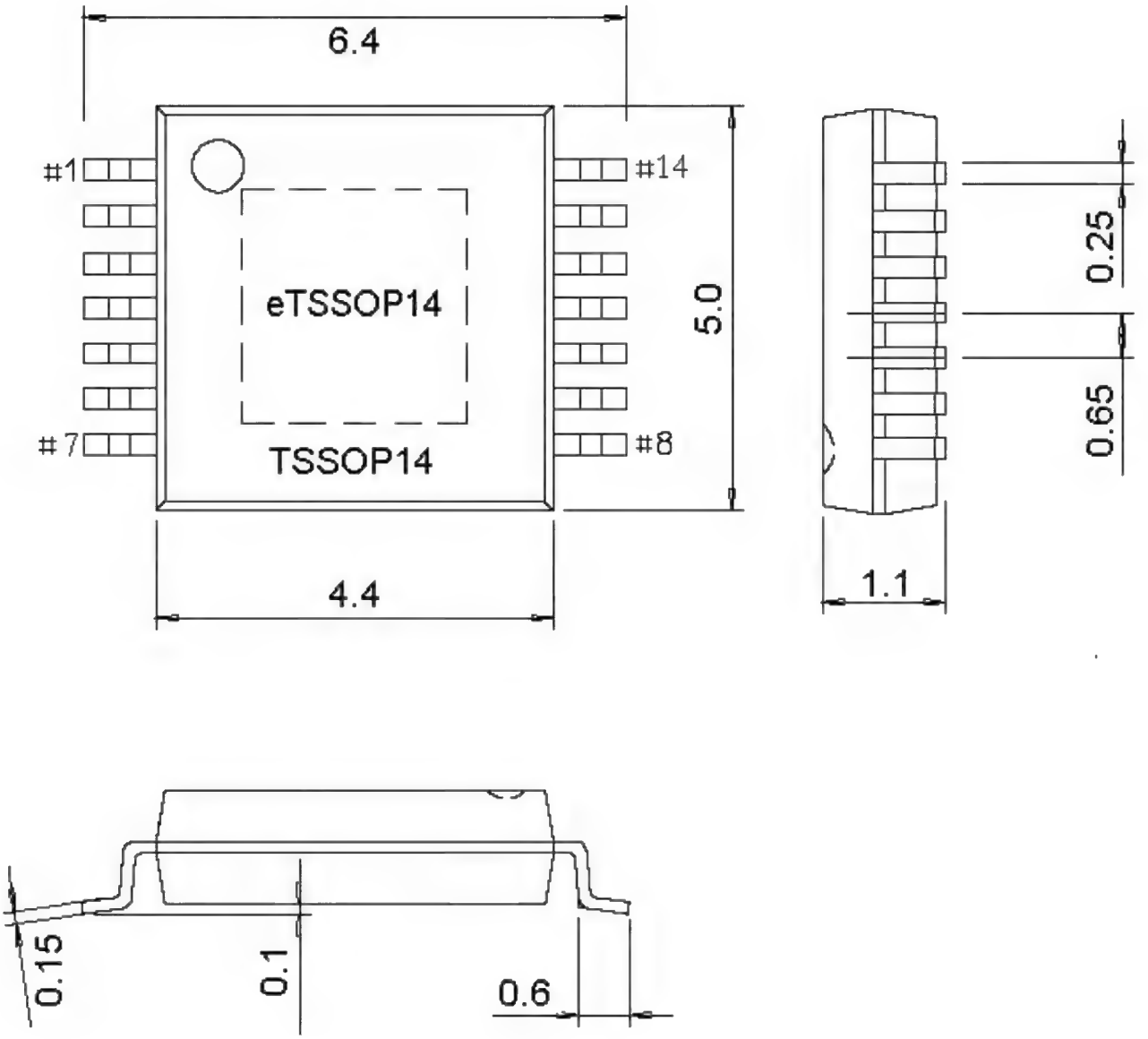
TSSOP Type (4.4mm, 173mil)

. **TSSOP8**



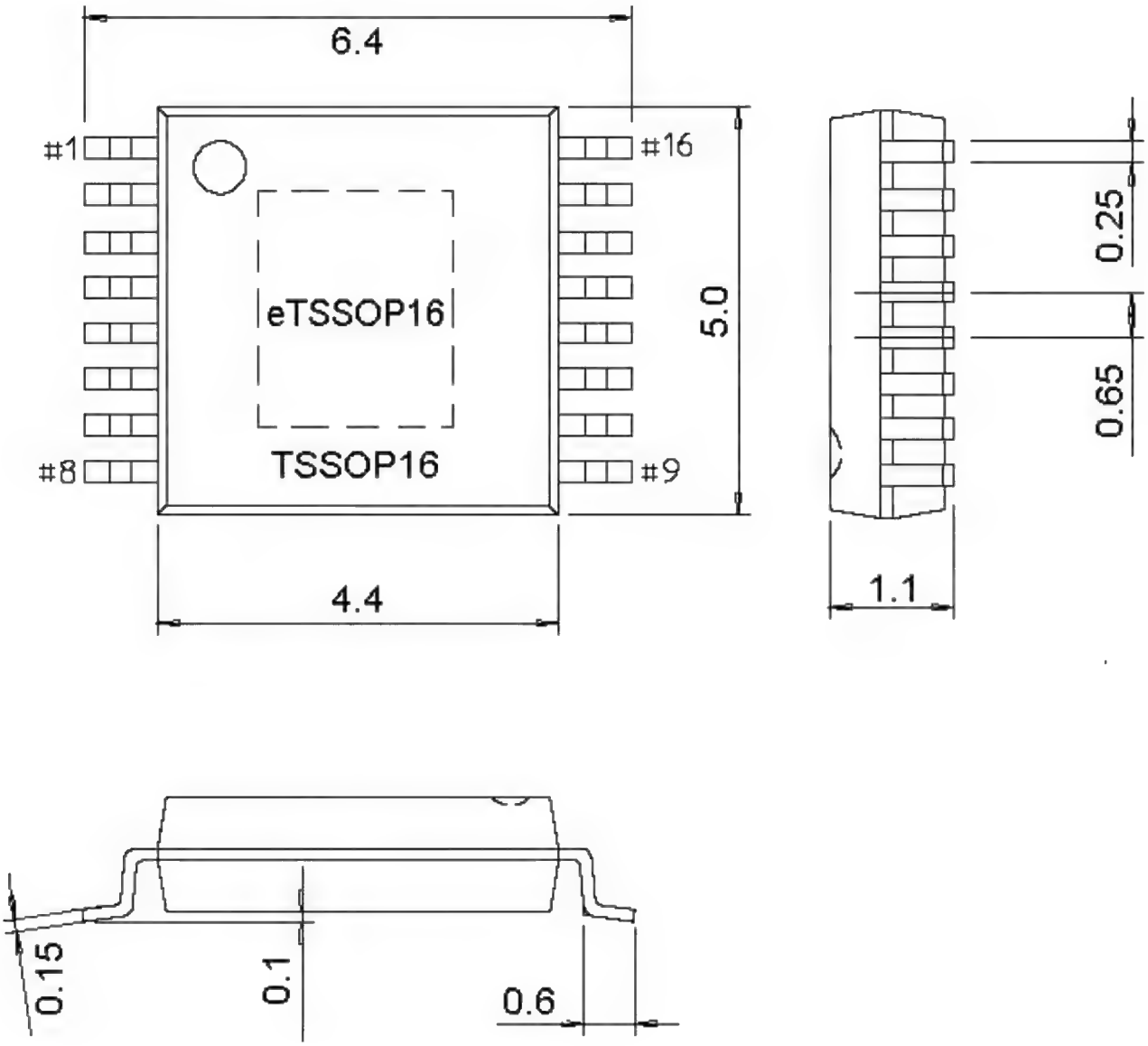
. TSSOP14, eTSSOP14

eTSSOP14 Exposed Pad: 3.0*3.0



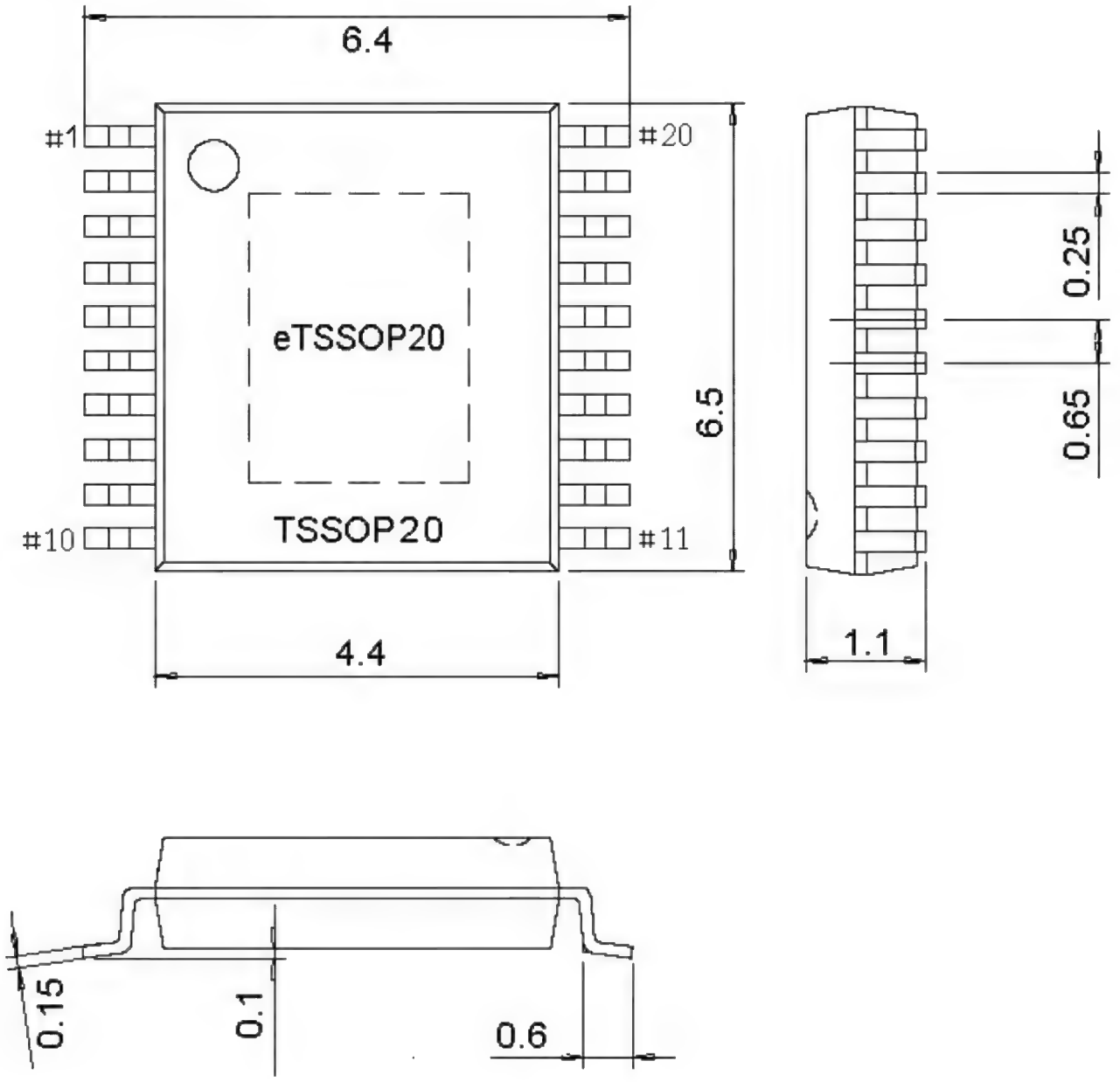
. **TSSOP16, eTSSOP16**

eTSSOP16 Exposed Pad: 2.8*3.0

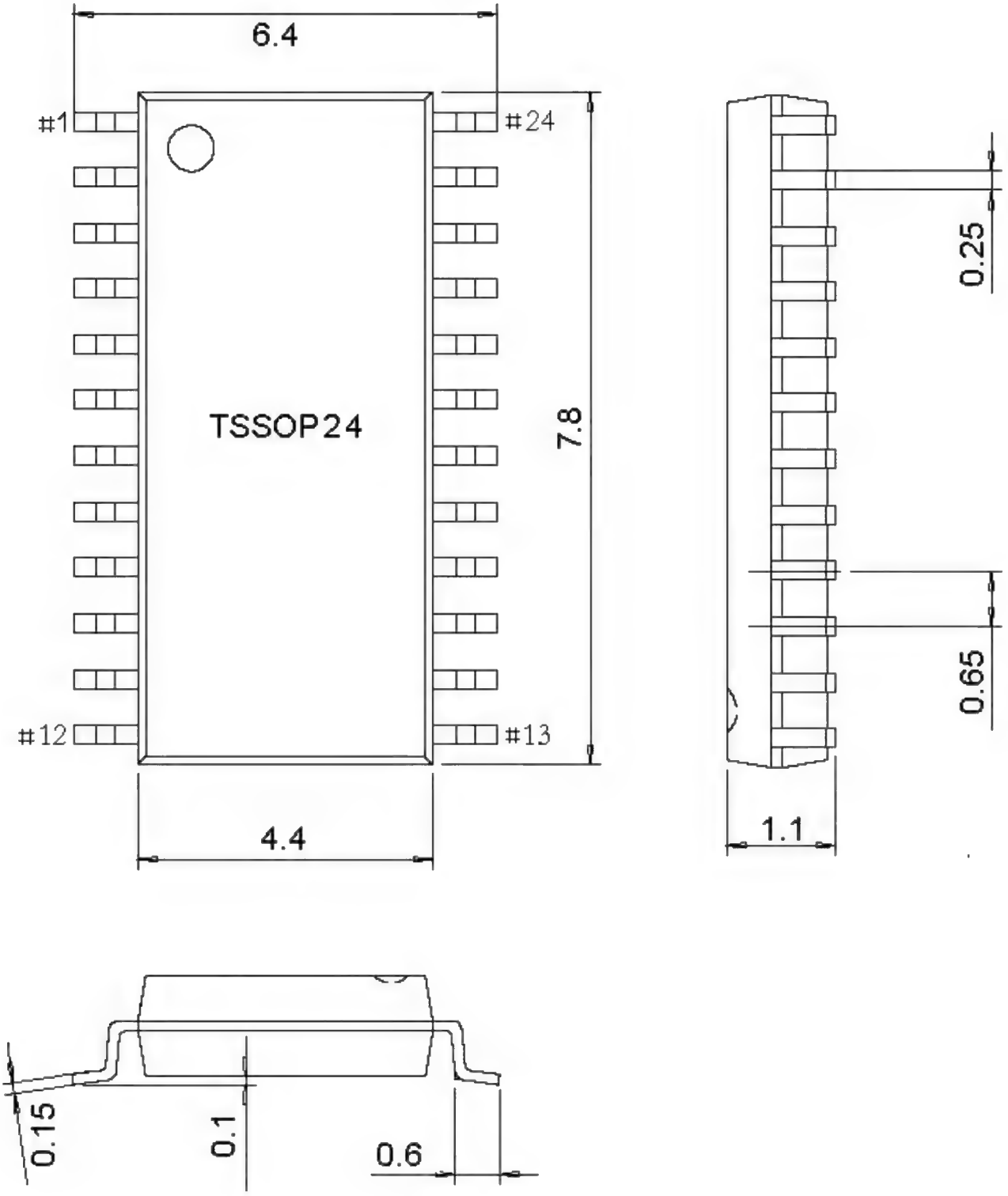


. **TSSOP20, eTSSOP20**

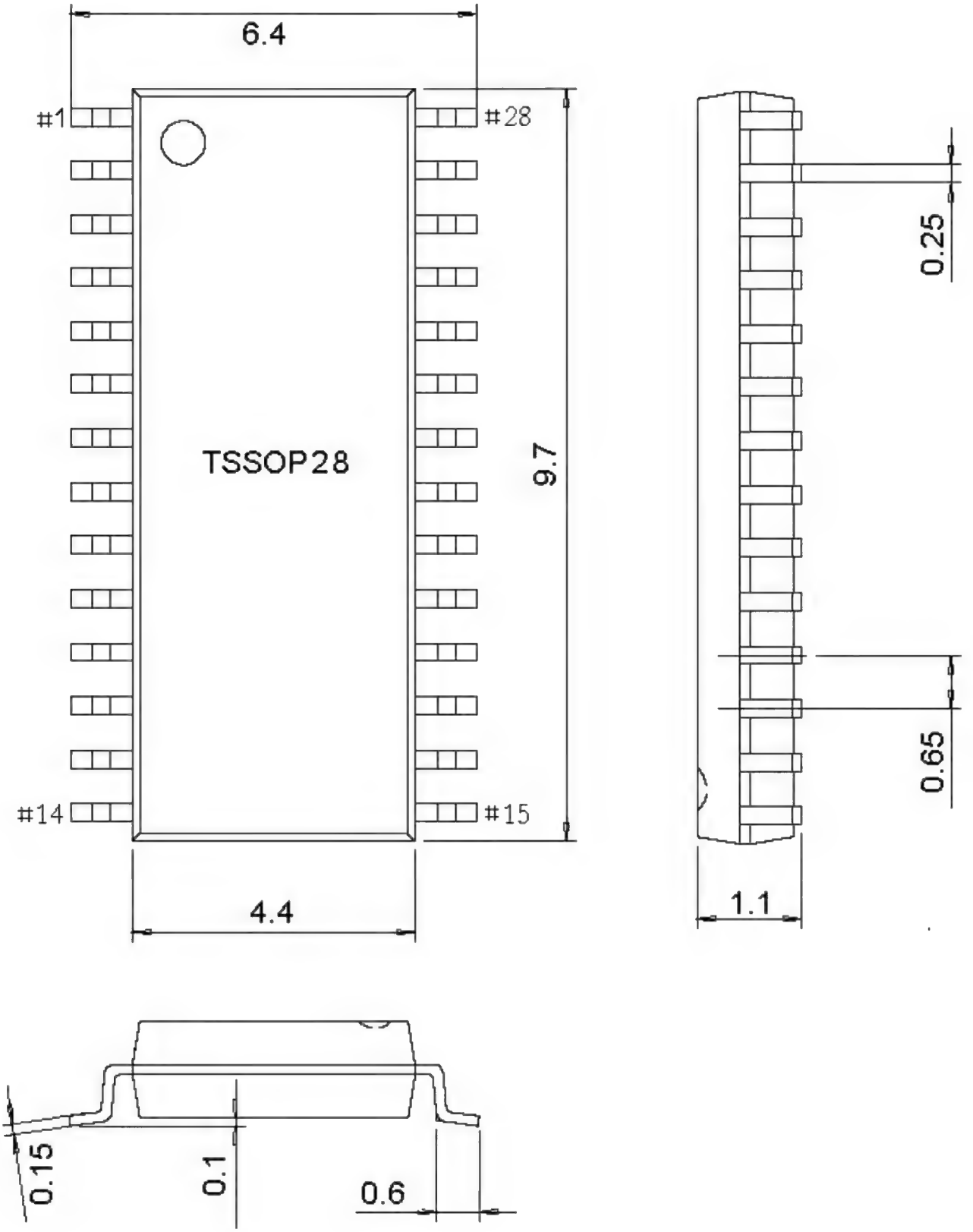
eTSSOP20 Exposed Pad: 3.0*4.2



. **TSSOP24**

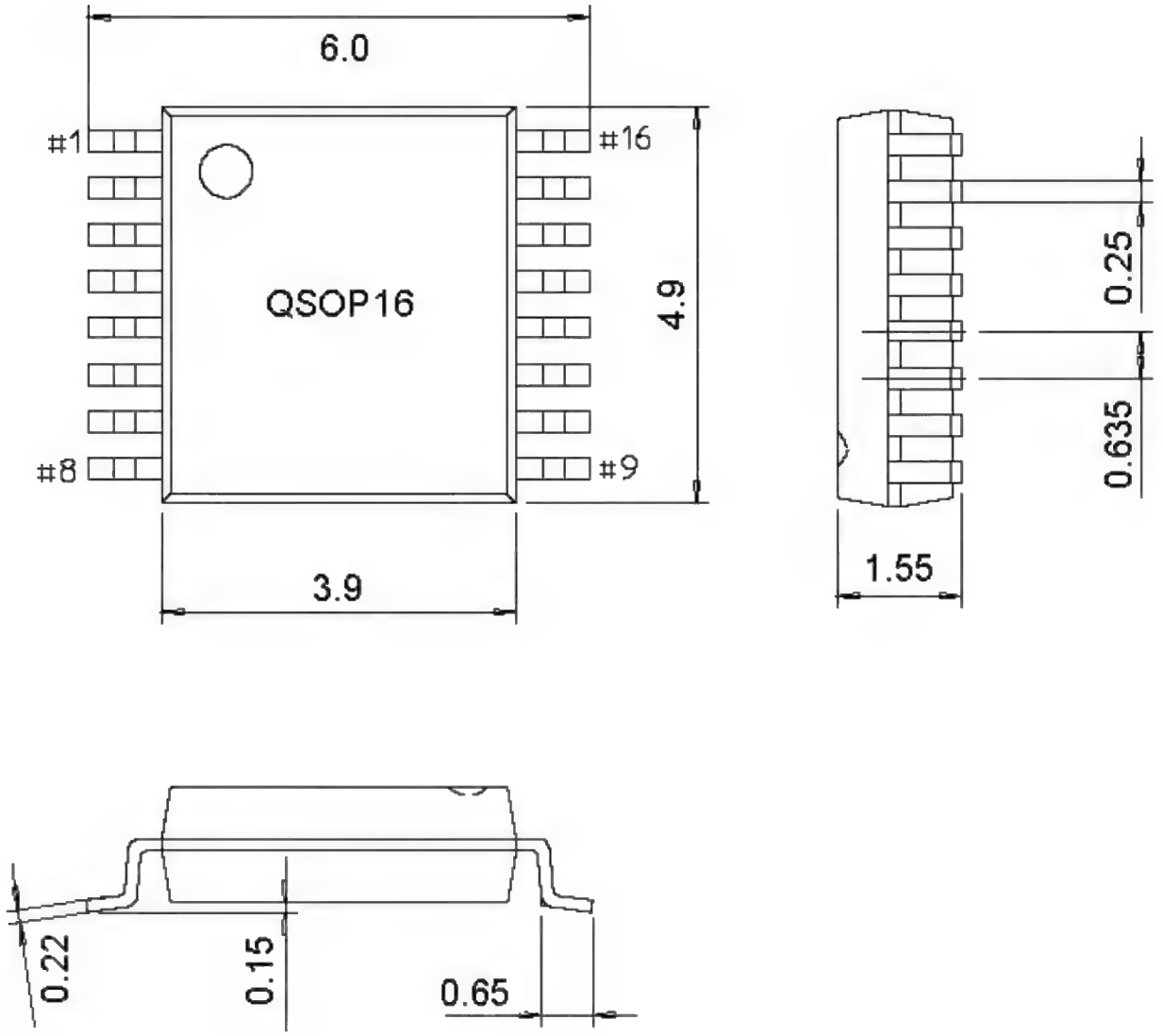


. **TSSOP28**

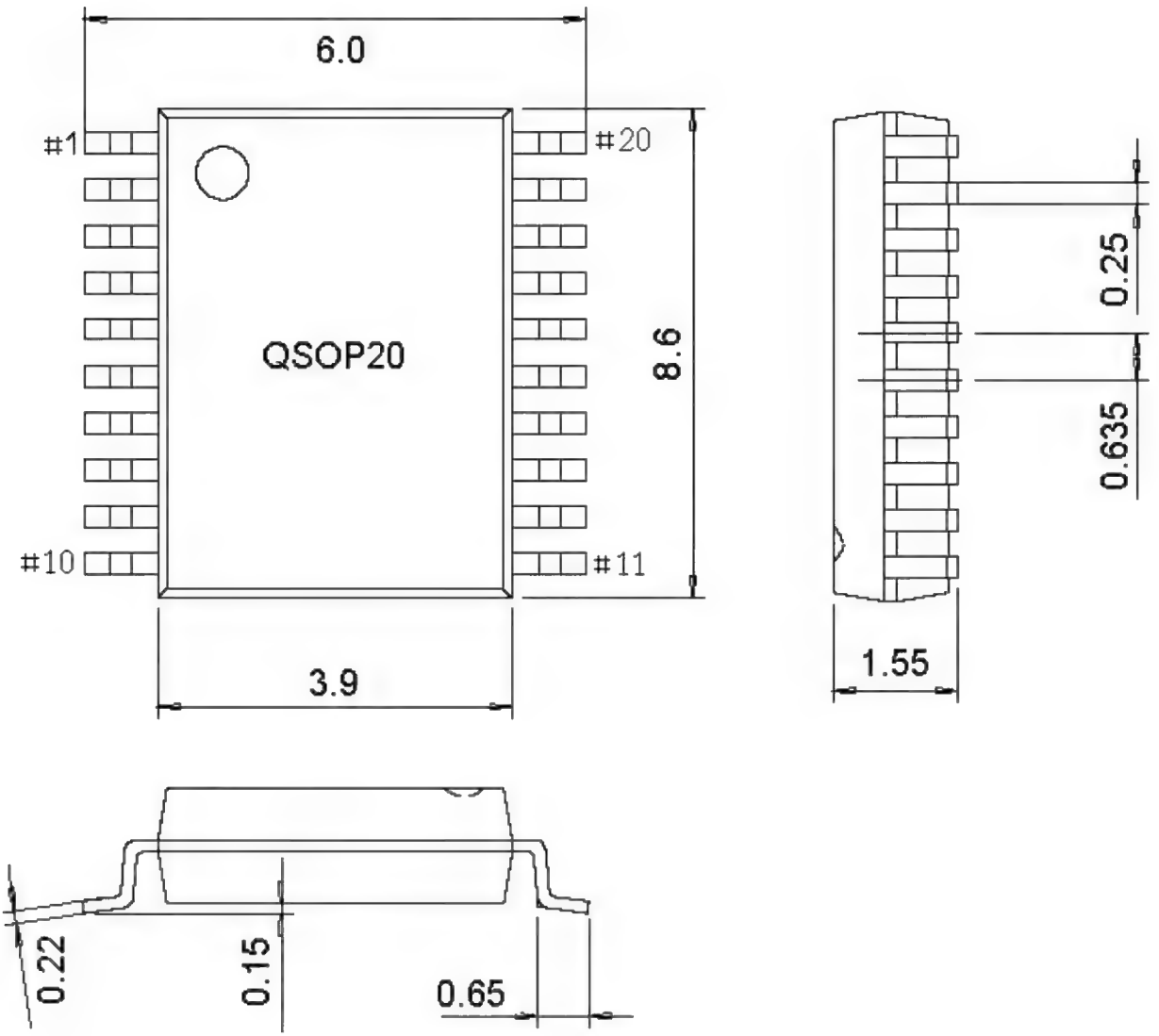


QSOP Type (3.9mm, 150mil) (SSOP-150)

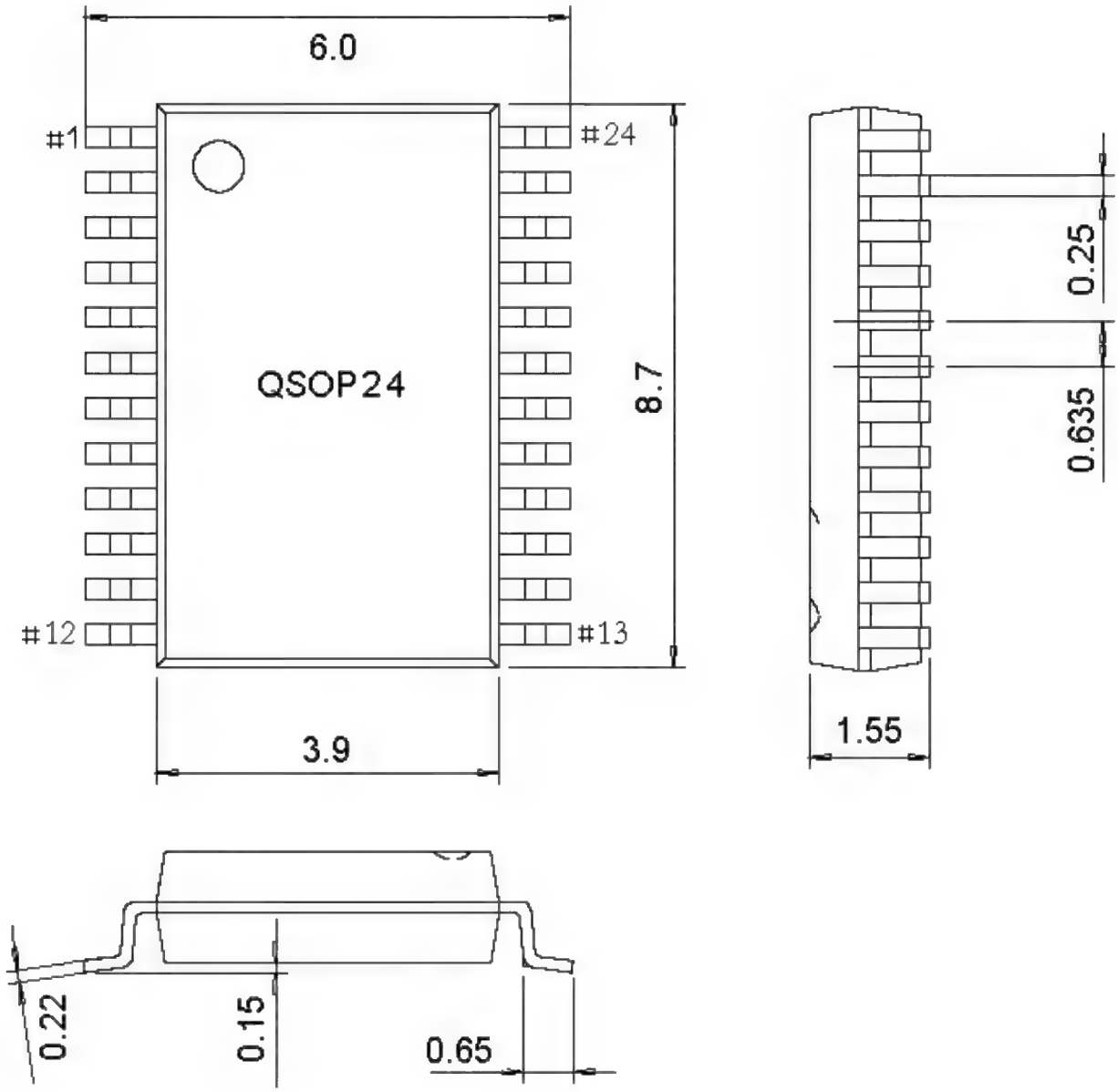
. **QSOP16 (SSOP16-150mil-0.635)**



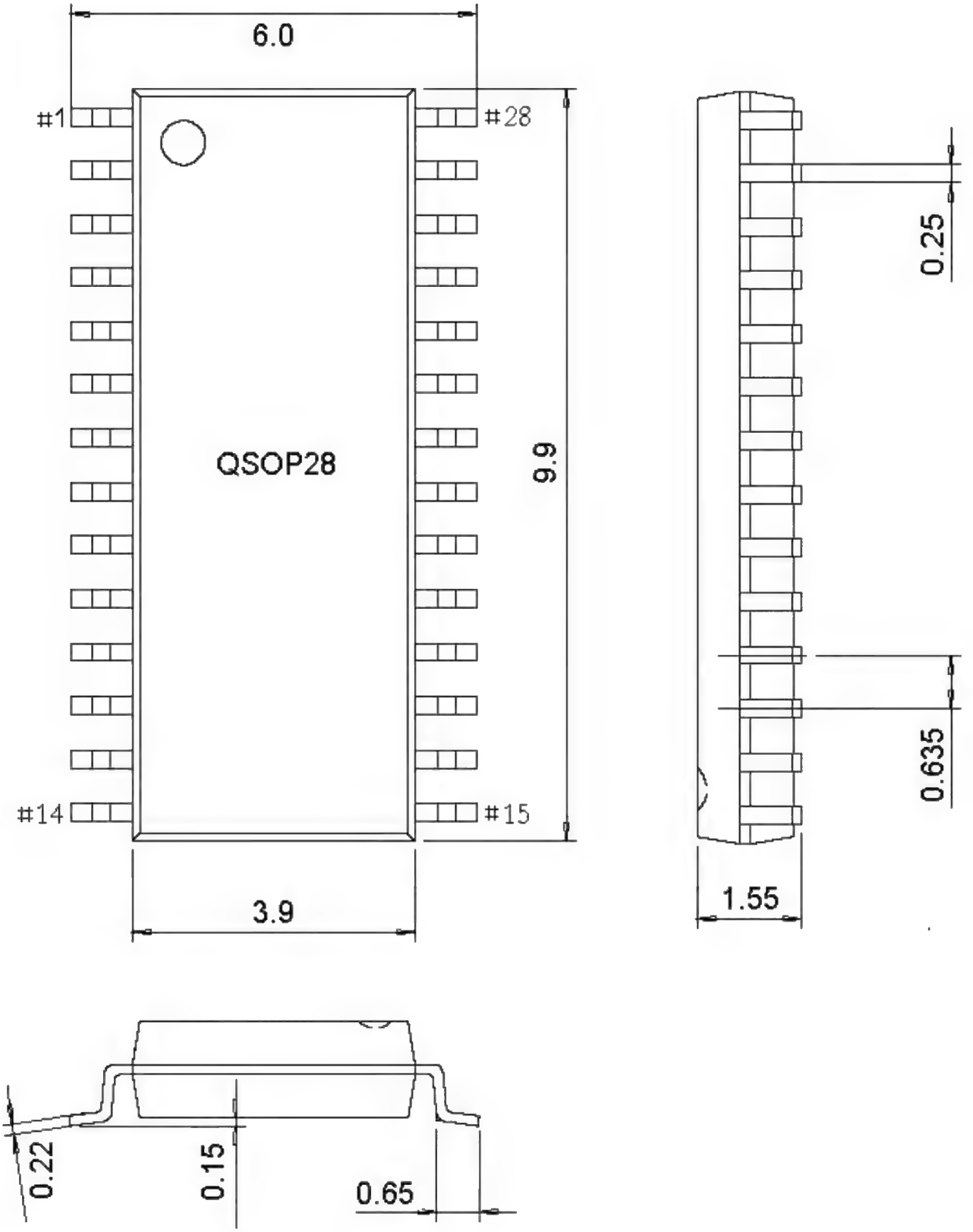
. **QSOP20 (SSOP20-150mil-0.635)**



. **QSOP24 (SSOP24-150mil-0.635)**

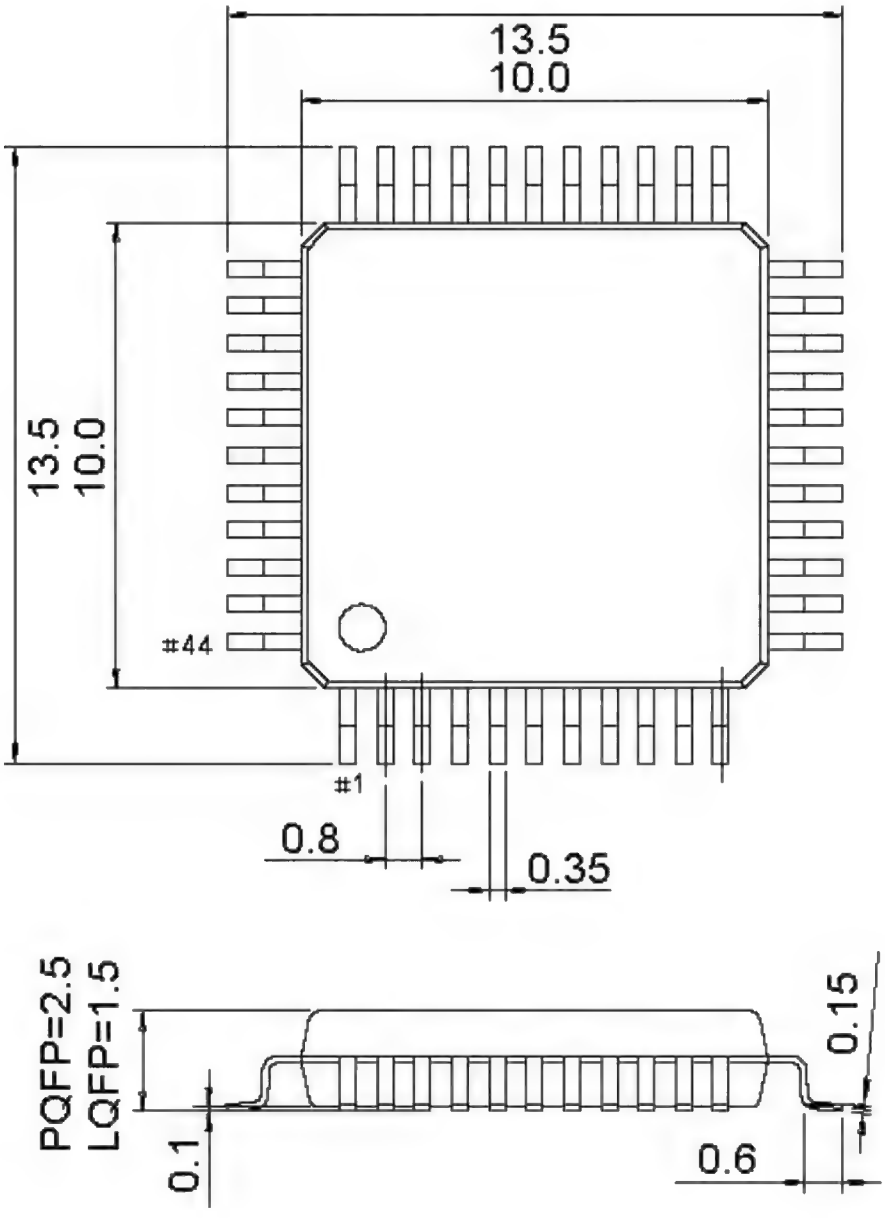


. **QSOP28 (SSOP28-150mil-0.635)**

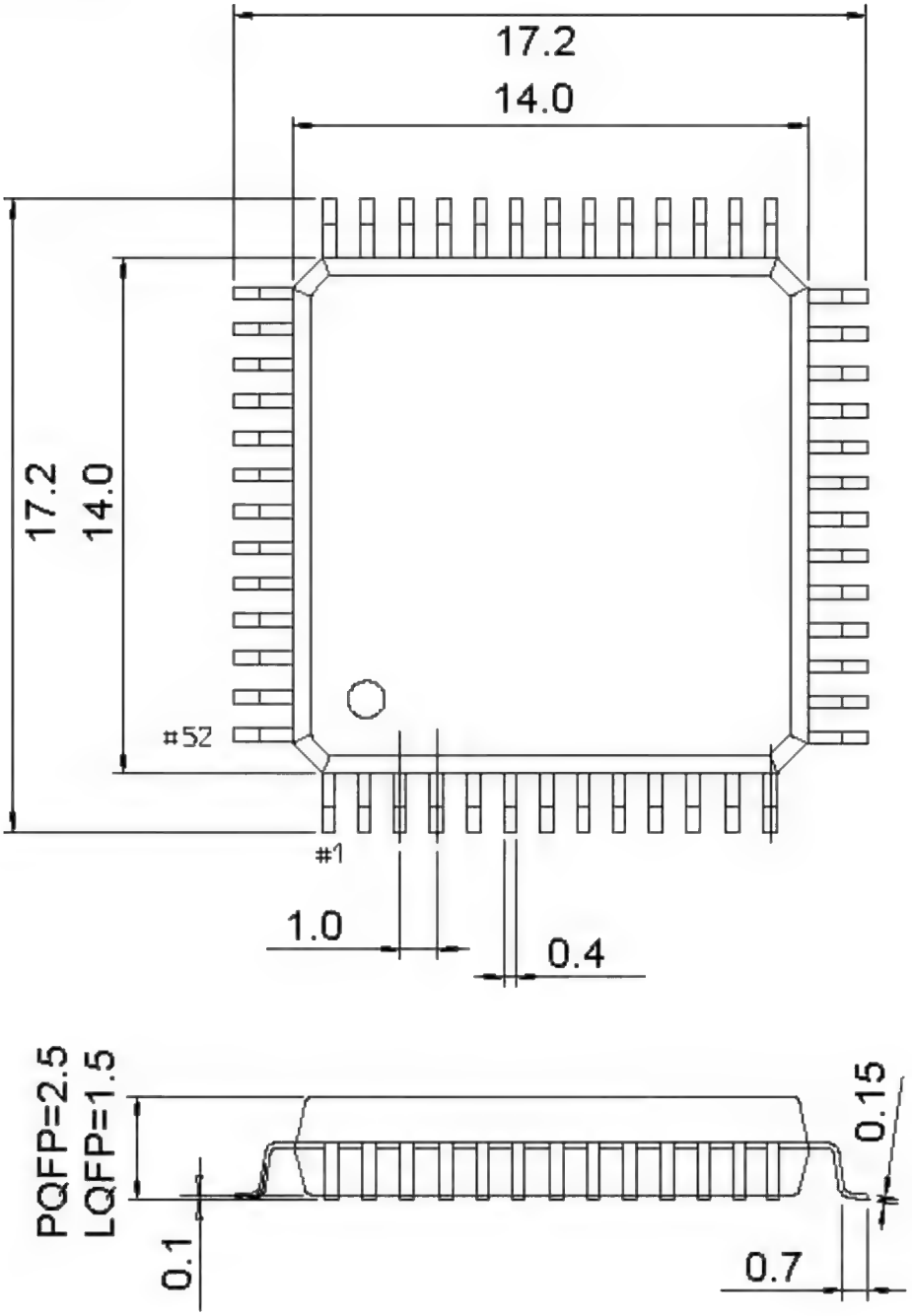


QFP Type (PQFP, LQFP, TQFP)

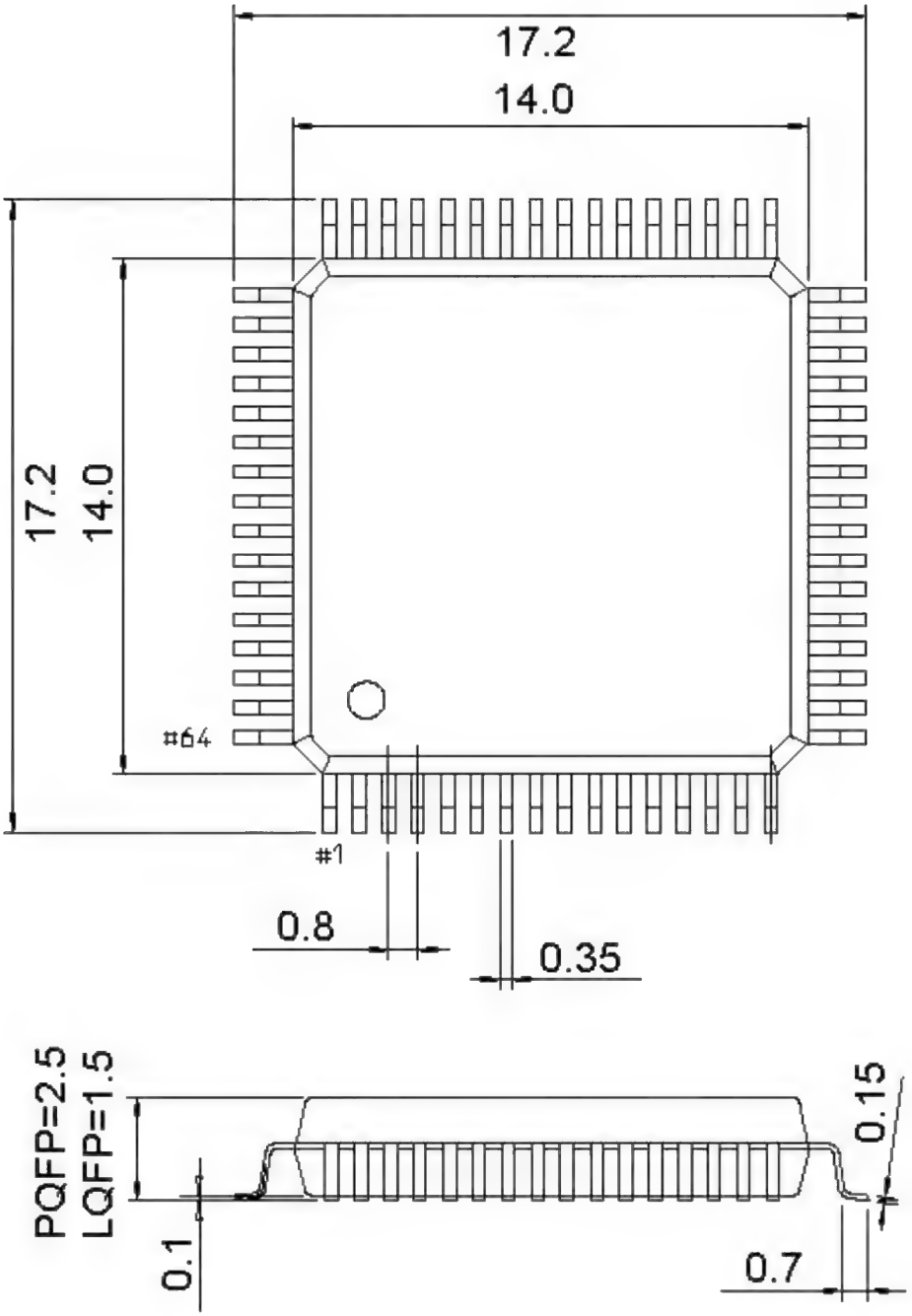
. **PQFP44 (QFP44)**



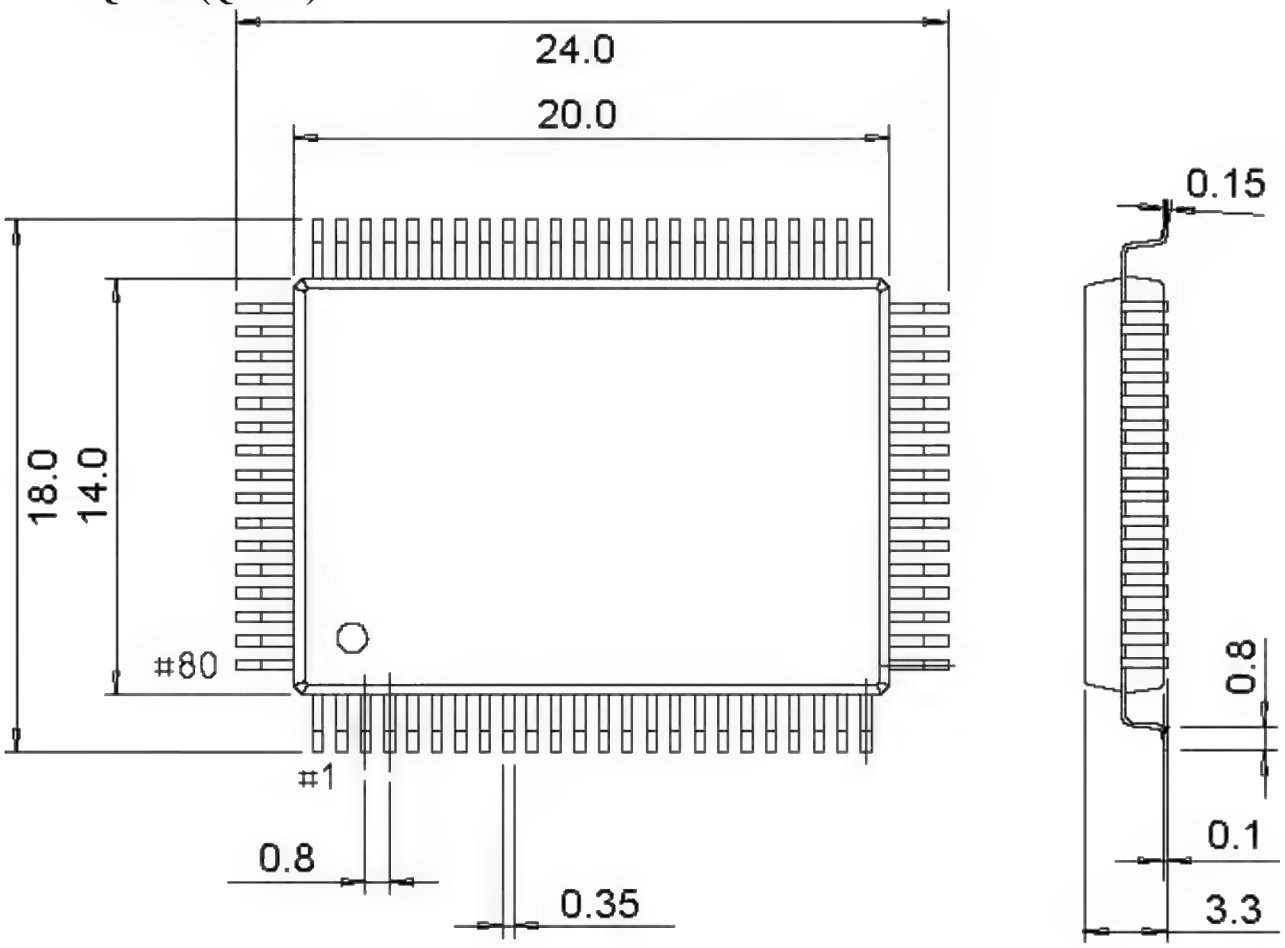
- **PQFP52 (QFP52)**



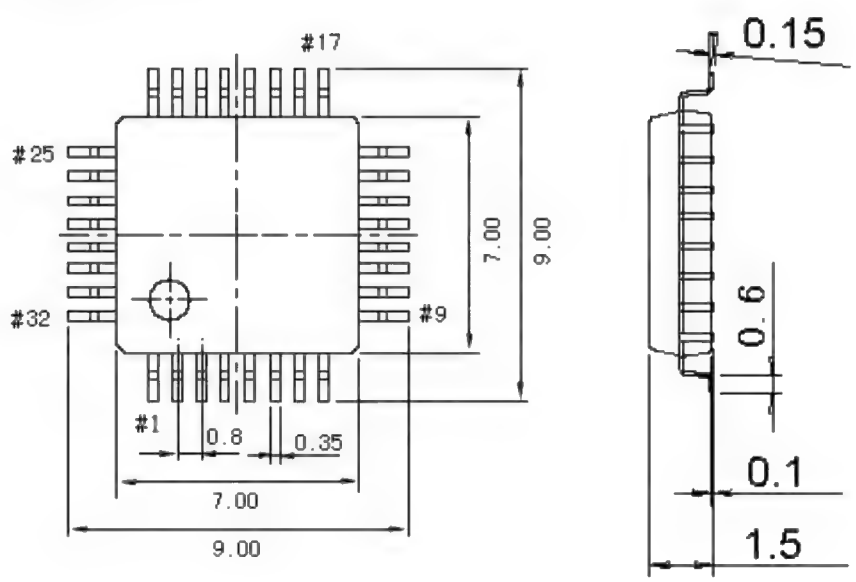
. **PQFP64 (QFP64), LQFP64-14*14**



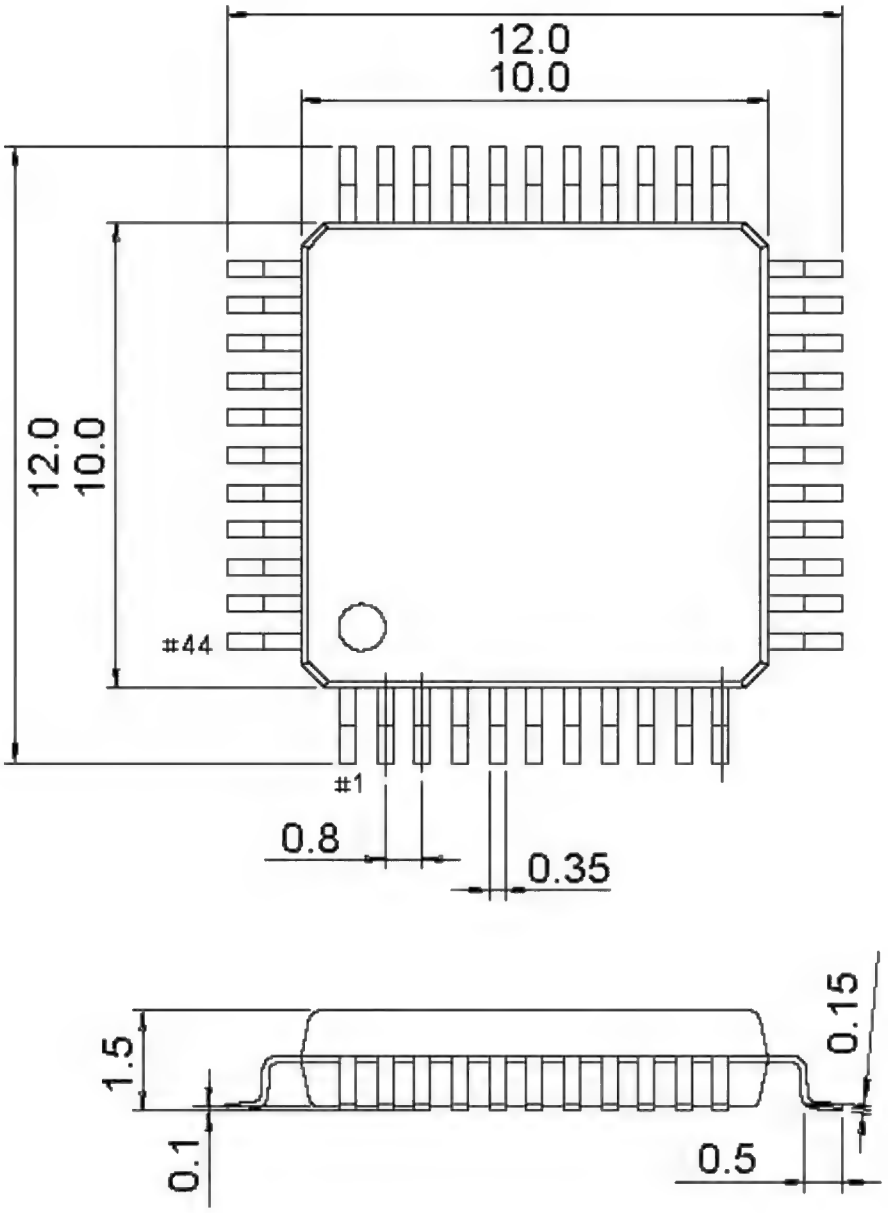
. **PQFP80 (QFP80)**



. **LQFP32 (LQFP32-7*7)**

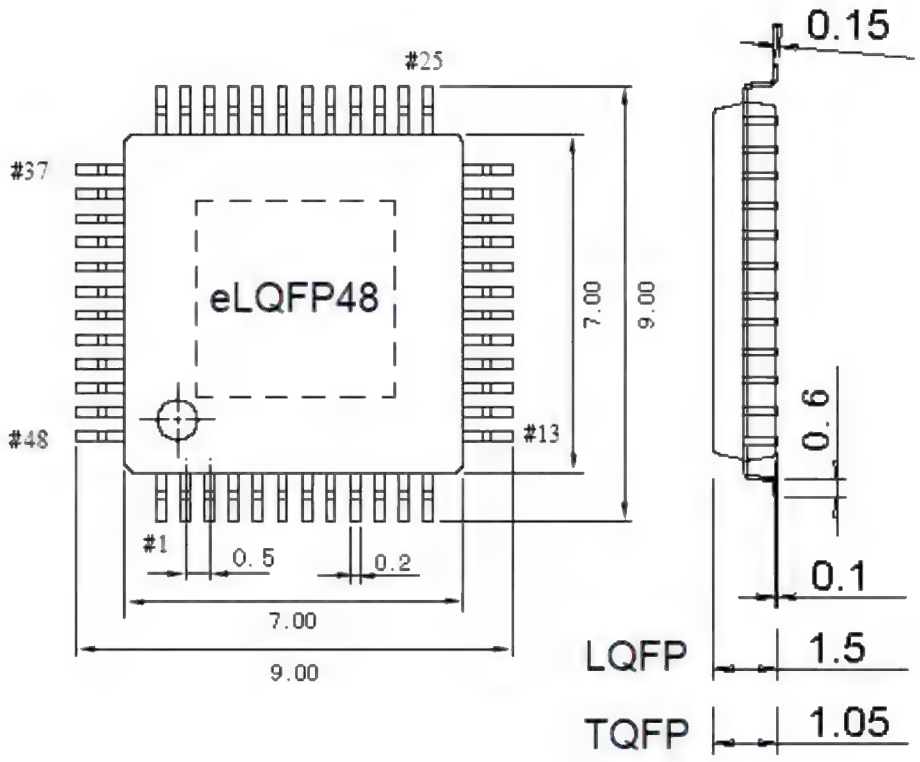


. **LQFP44 (LQFP44-10*10)**



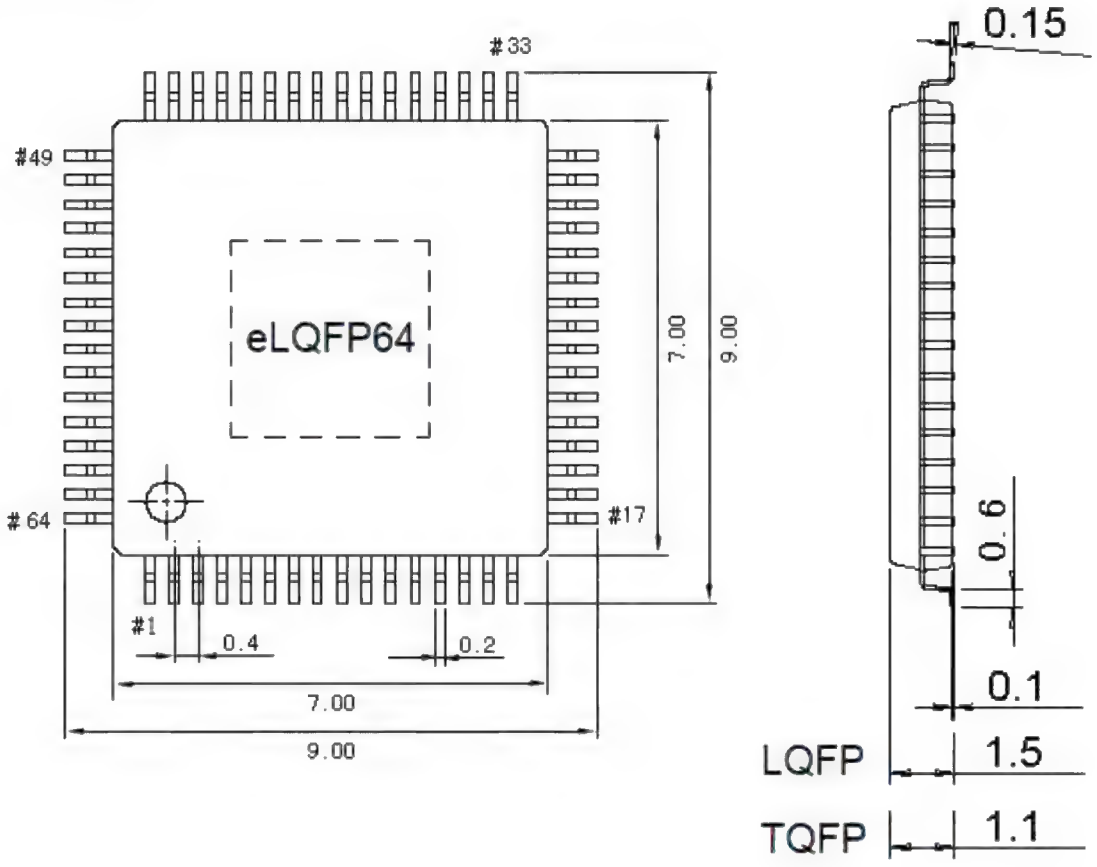
- **LQFP48 (LQFP48-7*7), TQFP48、eLQFP48**

eLQFP48 Exposed Pad：3.2*3.2

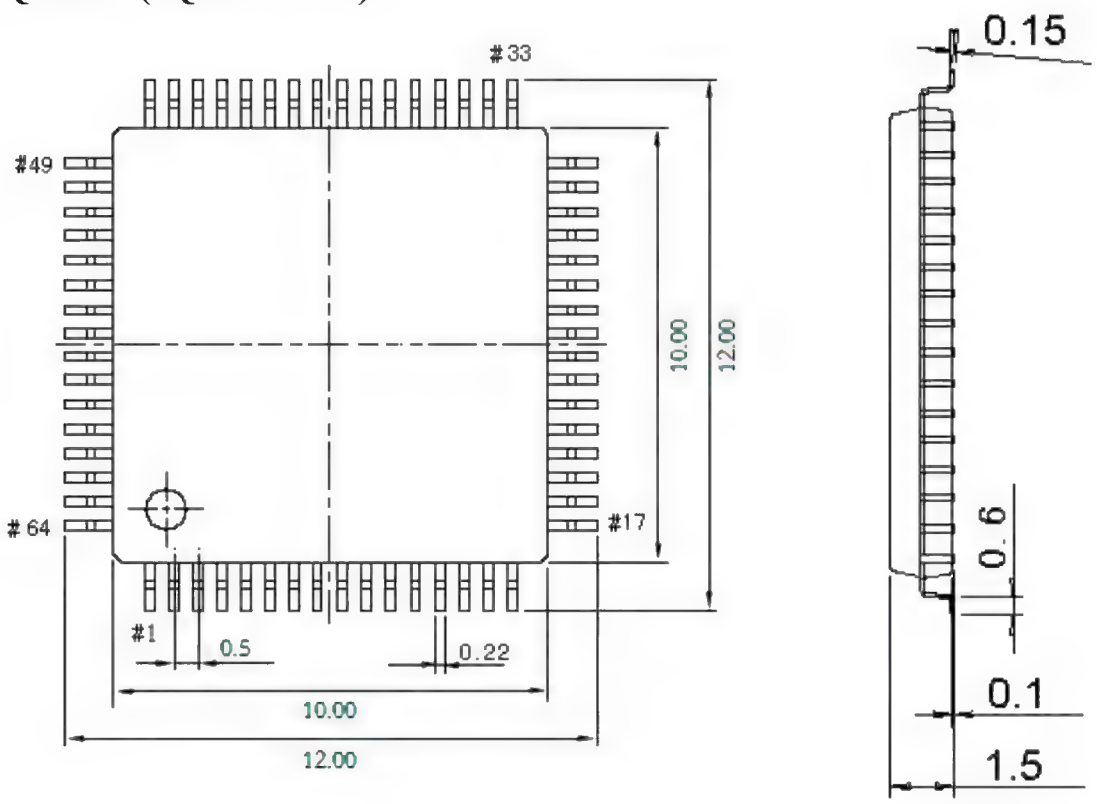


. **LQFP64 (LQFP64-7*7), TQFP64, eLQFP64**

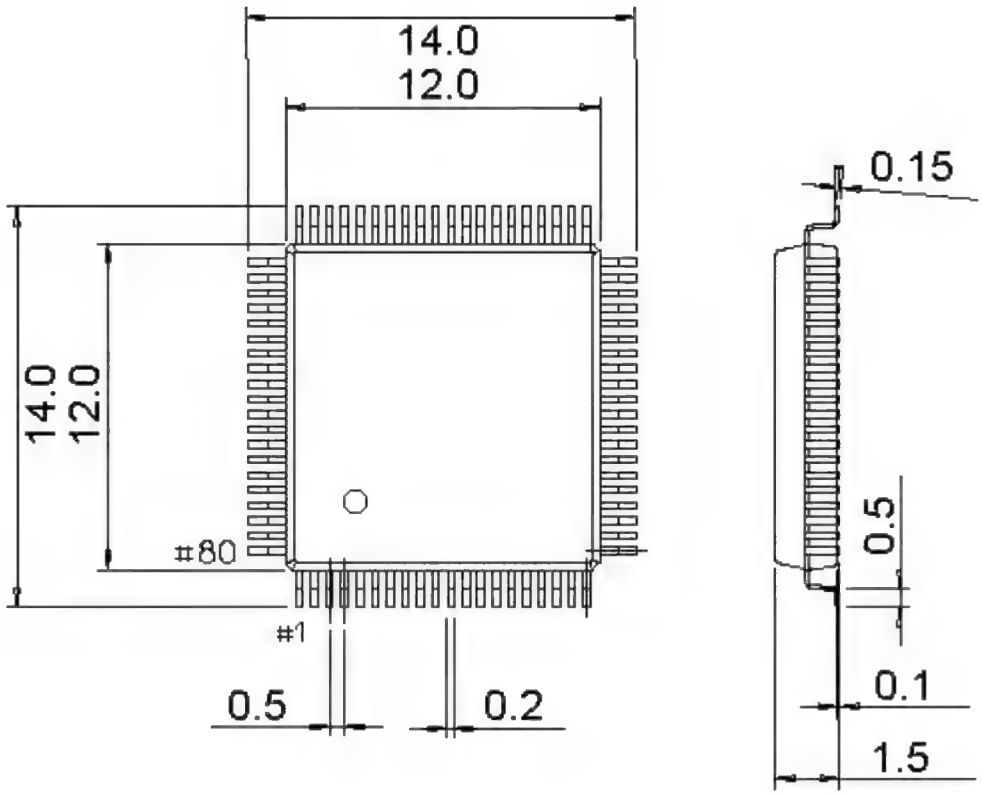
eLQFP64 Exposed Pad: 3.2*3.2



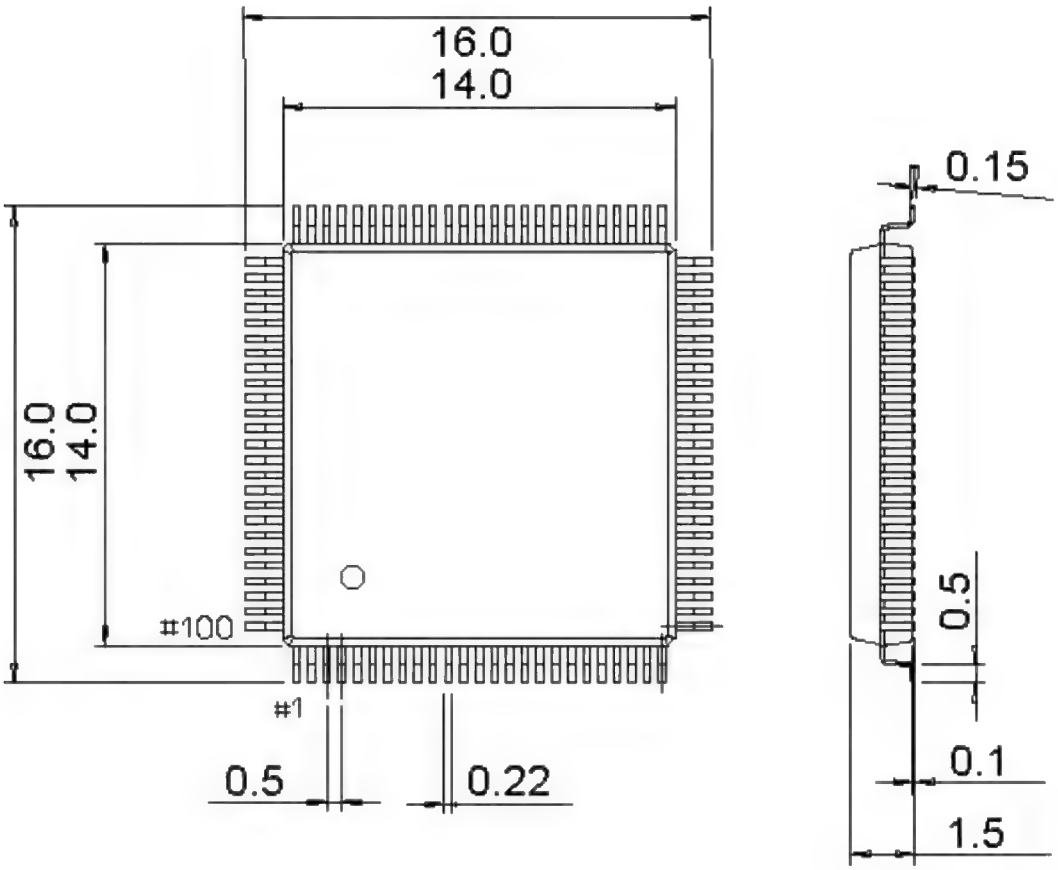
. **LQFP64M (LQFP64-10*10)**



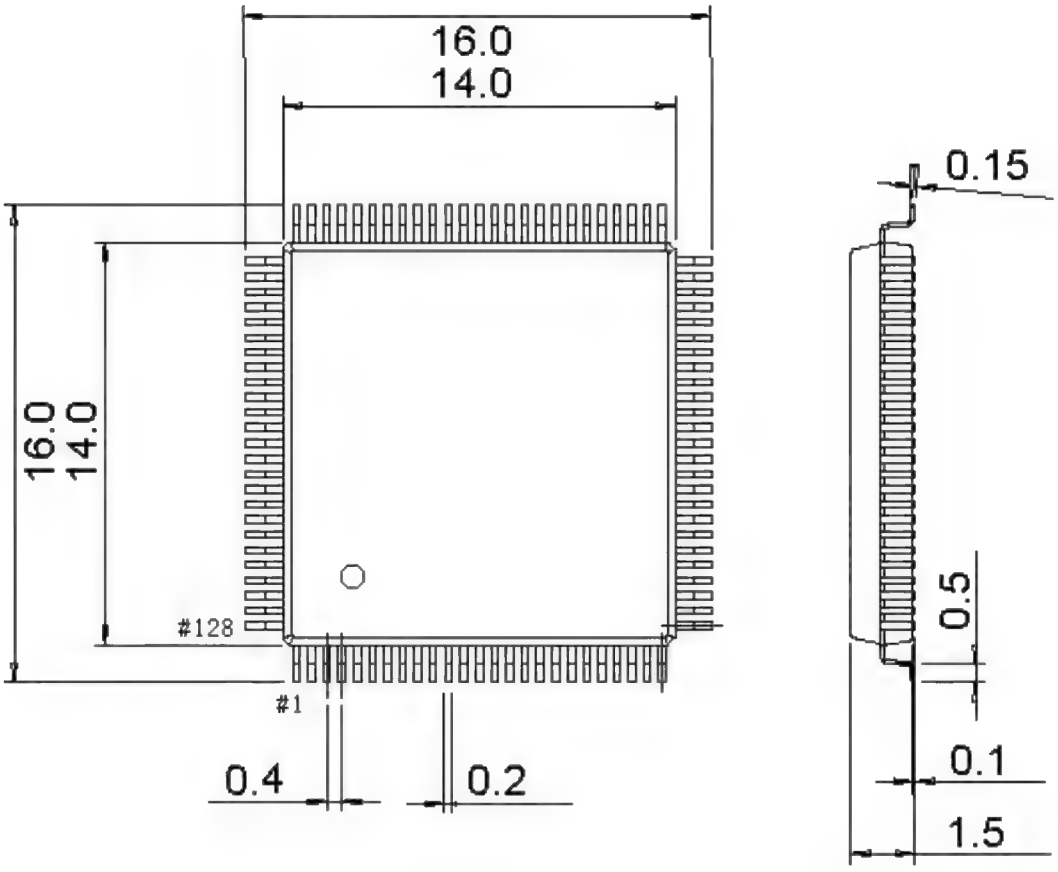
. **LQFP80 (LQFP80-12*12)**



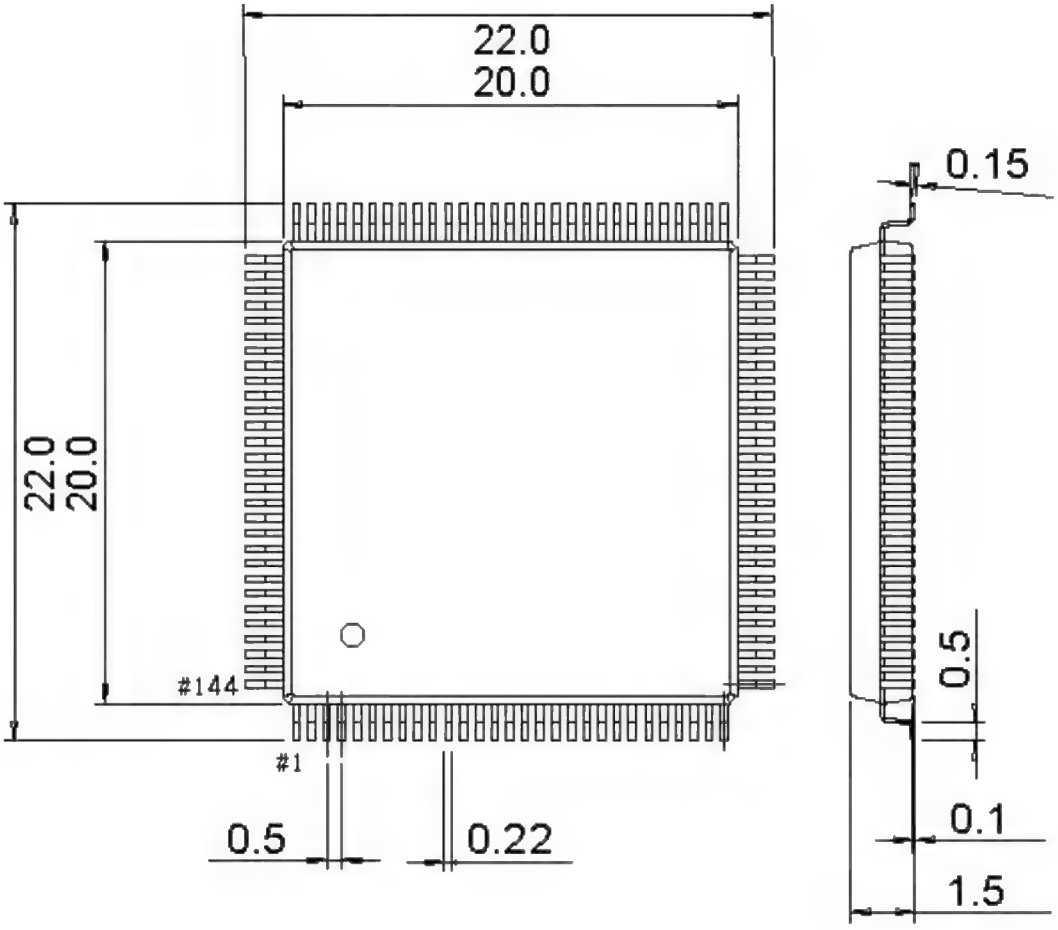
. **LQFP100 (LQFP100-14*14)**



. **LQFP128 (LQFP128-14*14)**



. **LQFP144 (LQFP144-20*20)**



QFN Type

. QFN/DFN Naming Rules Reference

Standard naming

QFN ab - d * e * t - p

Number ab: QFN package 4-side cumulative pin count, currently up to 128.

Numbers d and e: d and e represent the length and width of the QFN shape (The side where pin 1# is located).

Number t: t stands for the thickness of the QFN profile. 0.75 and 0.55 are more commonly used, as well as 0.85, 0.5, 0.4 and so on.

Number p: p on behalf of the pin pitch, that is, the distance between the center of adjacent pins, if there are 2 kinds of take its small, 0.4 and 0.5 are more commonly used, and another 0.35, 0.65, 0.45, 0.3 and so on.

Reference simplified naming

QFN ab c d X e

Number ab: QFN package 4-side cumulative pin count, currently up to 128.

Letter c: no c represents general-purpose QFN with Exposed Pad, default size, no numbers d and e;

Letter X represents general-purpose QFN with Exposed Pad, non-default size, at least number d;

Letter L represents general-purpose QFN without Exposed Pad, non-default size, at least number d;

Letter C represents WCH-designed general-purpose QFN with Exposed Pad, at least number d;

Letter F represents WCH-customized dedicated QFN without Exposed Pad, at least number d;

Letter E represents WCH-customized specialized QFN with Exposed Pad, at least number d.

Numbers d and e: d and e represent the length and width of the QFN profile (The side where pin 1# is located);

No d no e represents the default size, which is also the common size;

With d without e means the size is d*d square;

If the number exceeds 13 then divide by 10, e.g. 45 means 4.5.

The default size is usually the smallest square size when pitch=0.4, which is also the common size:

QFN12, QFN14 defaults to 2*2 square;

QFN16, QFN20 defaults to 3*3 square;

QFN24, QFN28, QFN32 defaults to 4*4 square;

QFN36, QFN40, QFN44 defaults to 5*5 square.

Take QFN20 for example:

QFN20: General-purpose QFN with Exposed Pad, default size (QFN20 is 3*3 by default);

QFN20X4: General-purpose QFN with Exposed Pad, size 4*4;

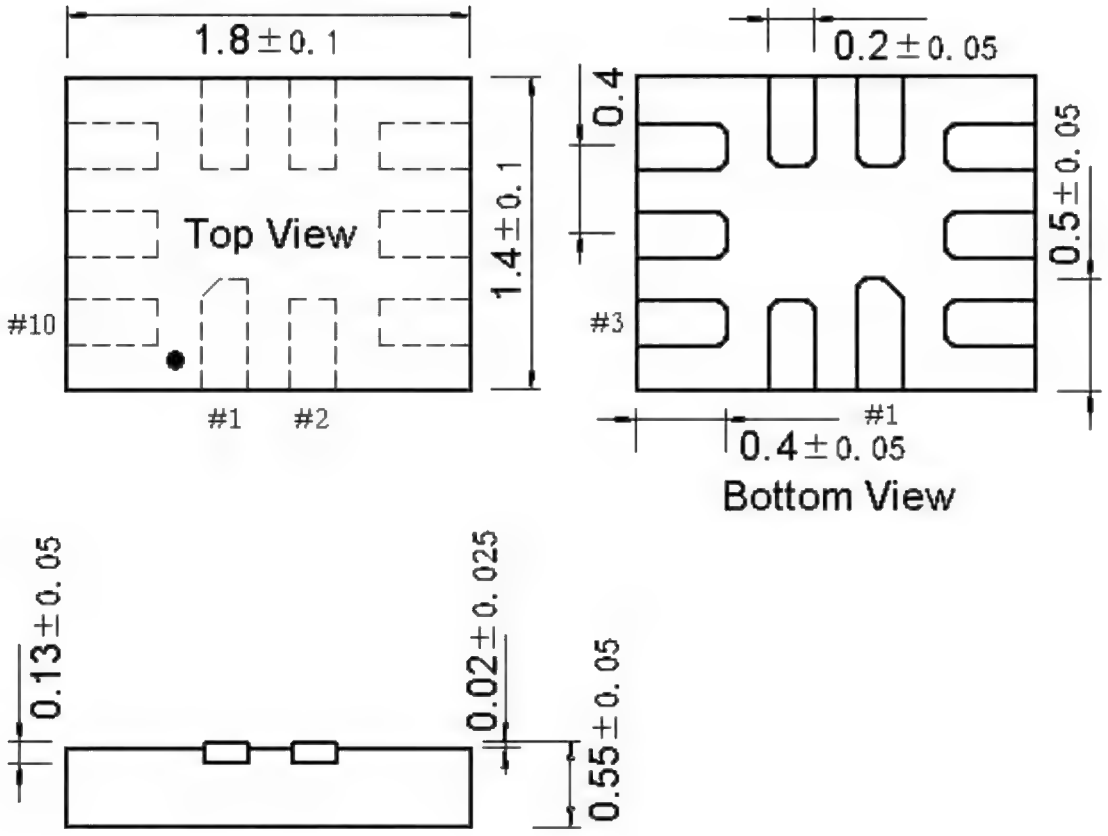
QFN20X25X45: General-purpose QFN with Exposed Pad, size 2.5*4.5;

QFN20C2: WCH-designed general-purpose QFN with Exposed Pad, size 2*2;

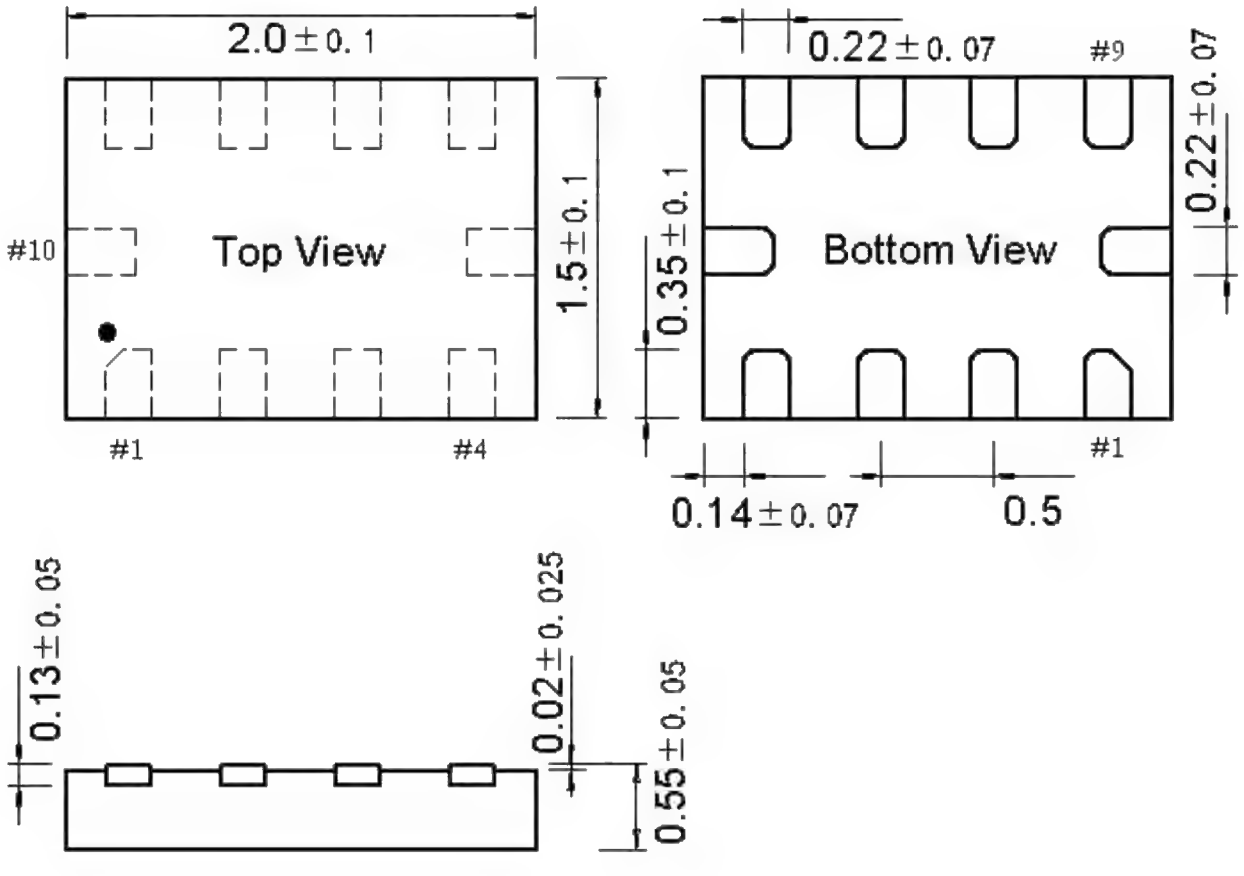
QFN20F3: WCH-customized special QFN, without Exposed Pad, size 3*3;

QFN20E3X4: WCH-customized special QFN with Exposed Pad, size 3*4.

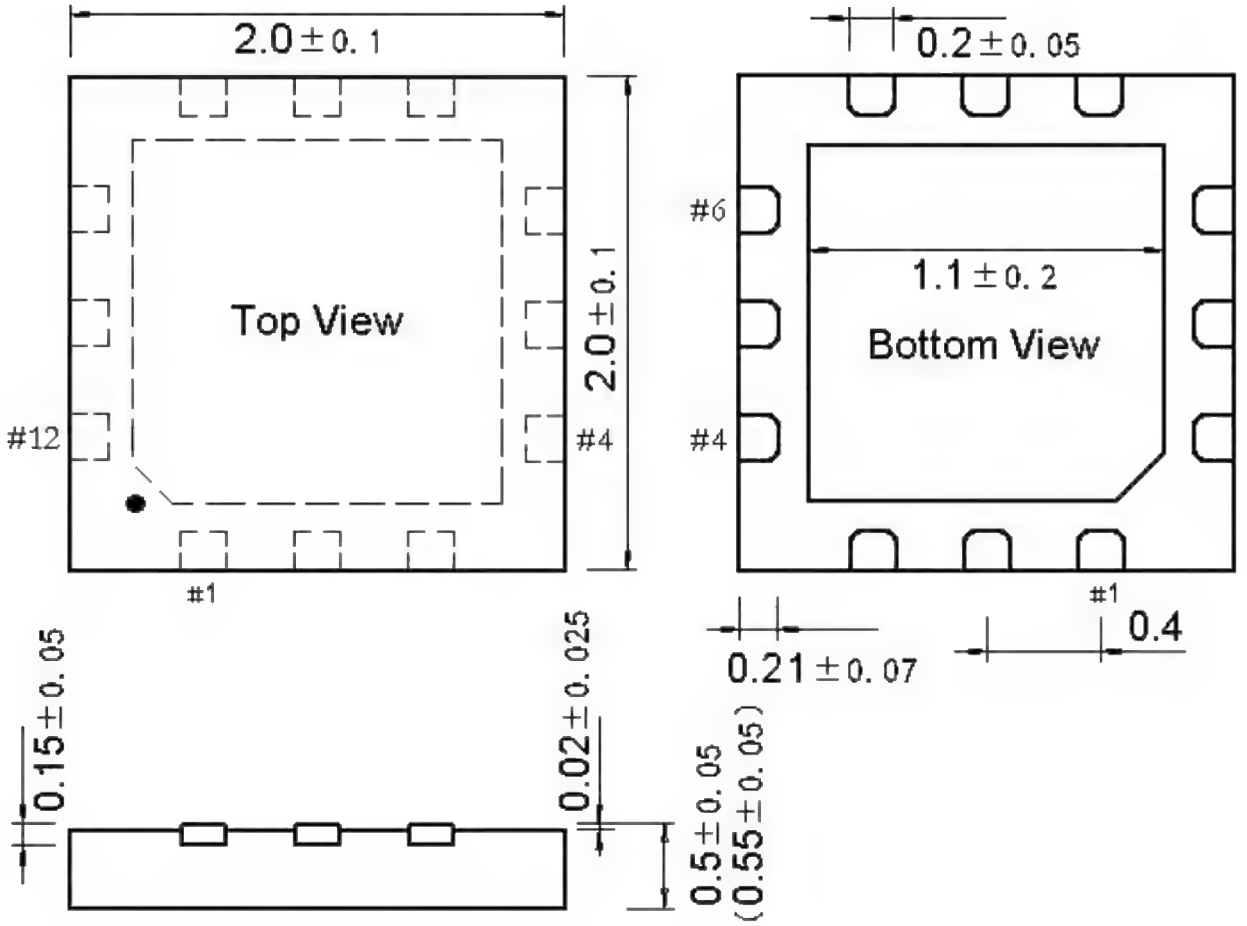
. **QFN10L14X18 (QFN10-1.4*1.8*0.55-0.4)**



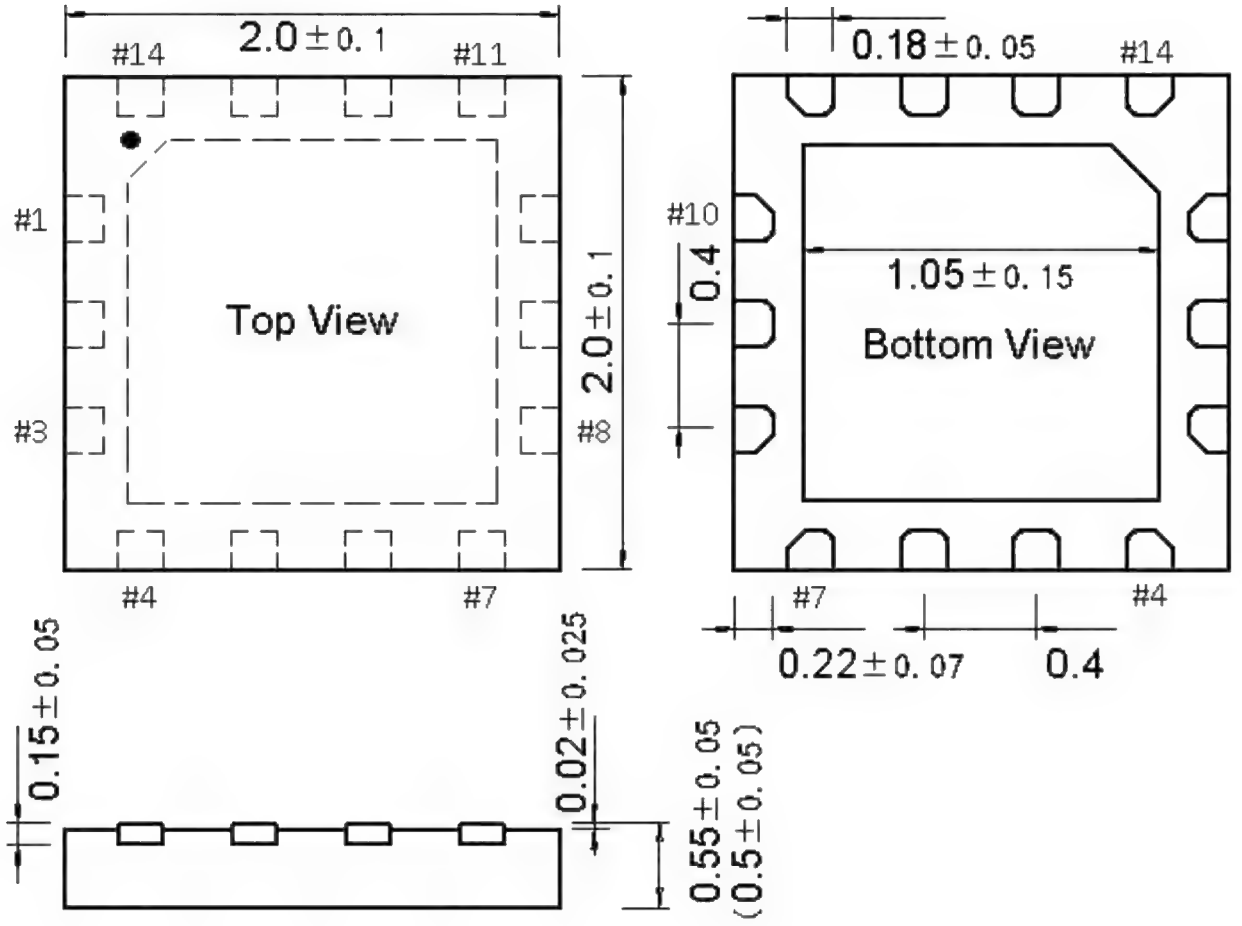
. **QFN10L15X2 (QFN10-1.5*2*0.55-0.4)**



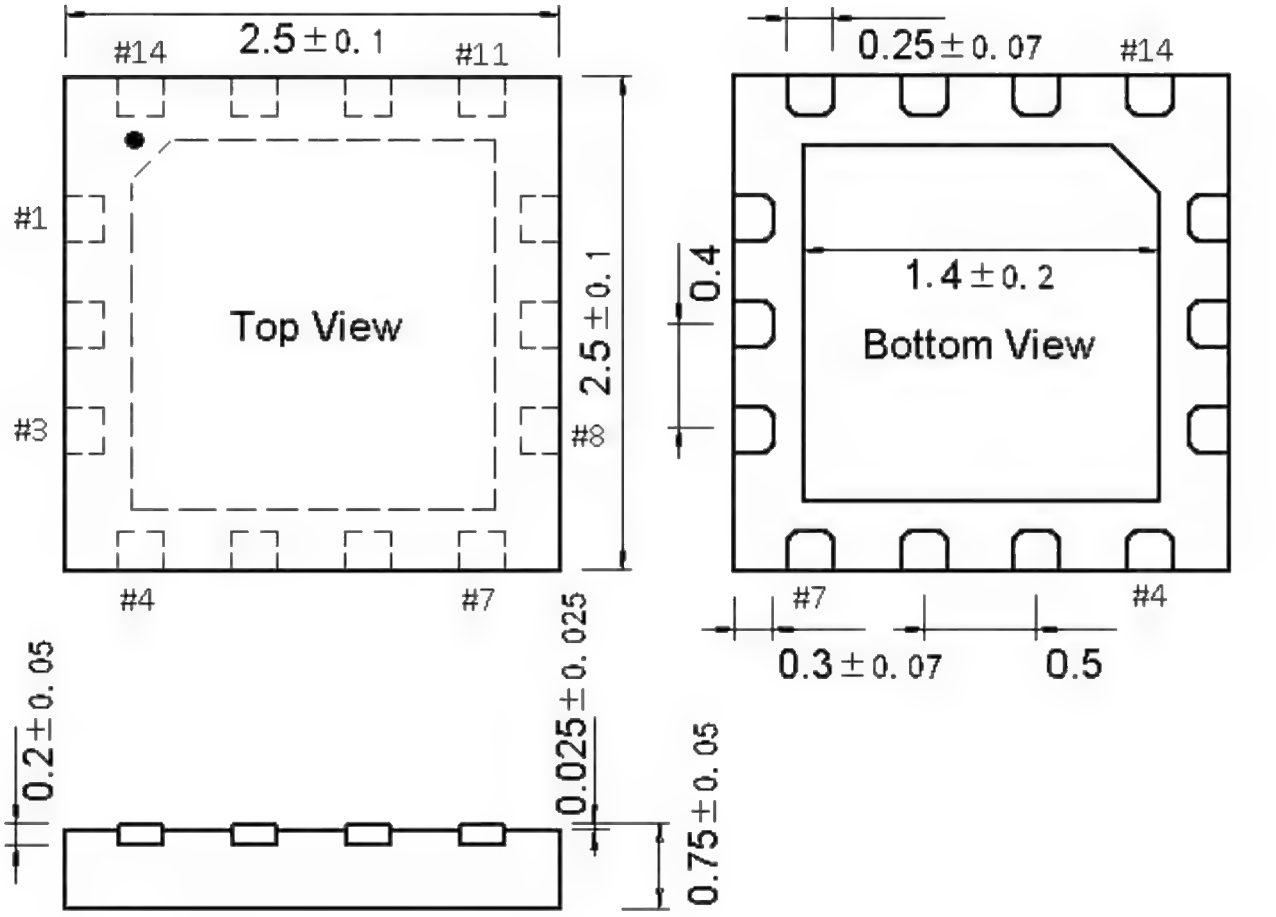
. **QFN12 (QFN12-2*2*0.5-0.4)**



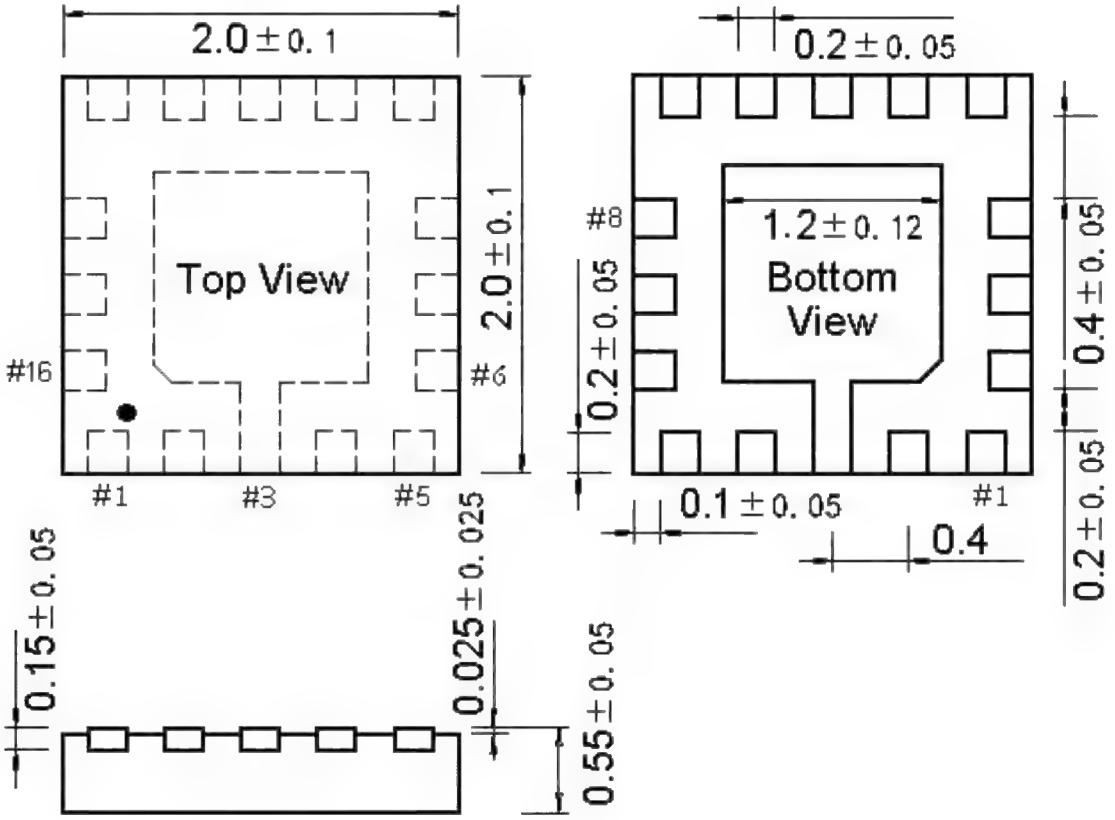
. **QFN14 (QFN14-2*2*0.55-0.4)**



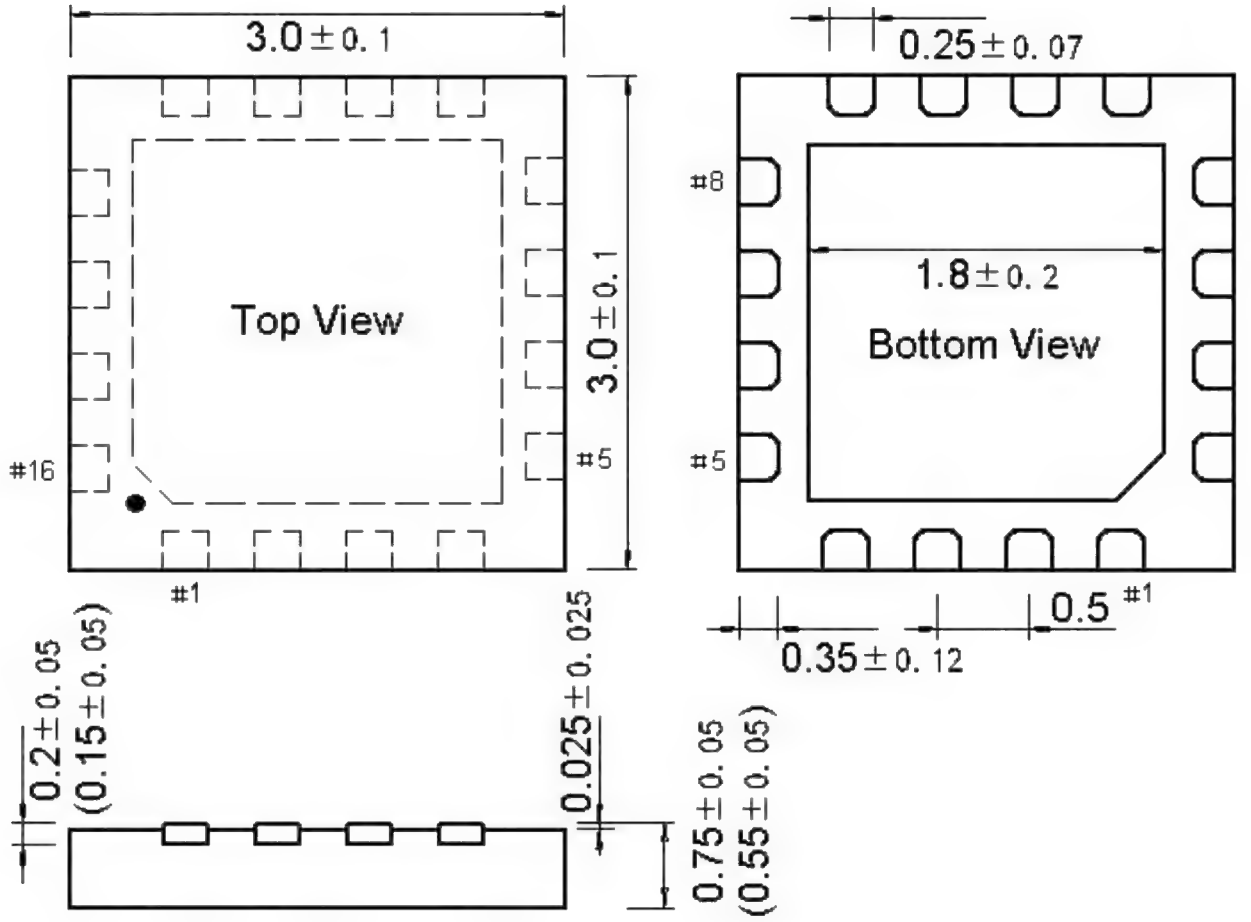
. **QFN14X25 (QFN14-2.5*2.5*0.75-0.5)**



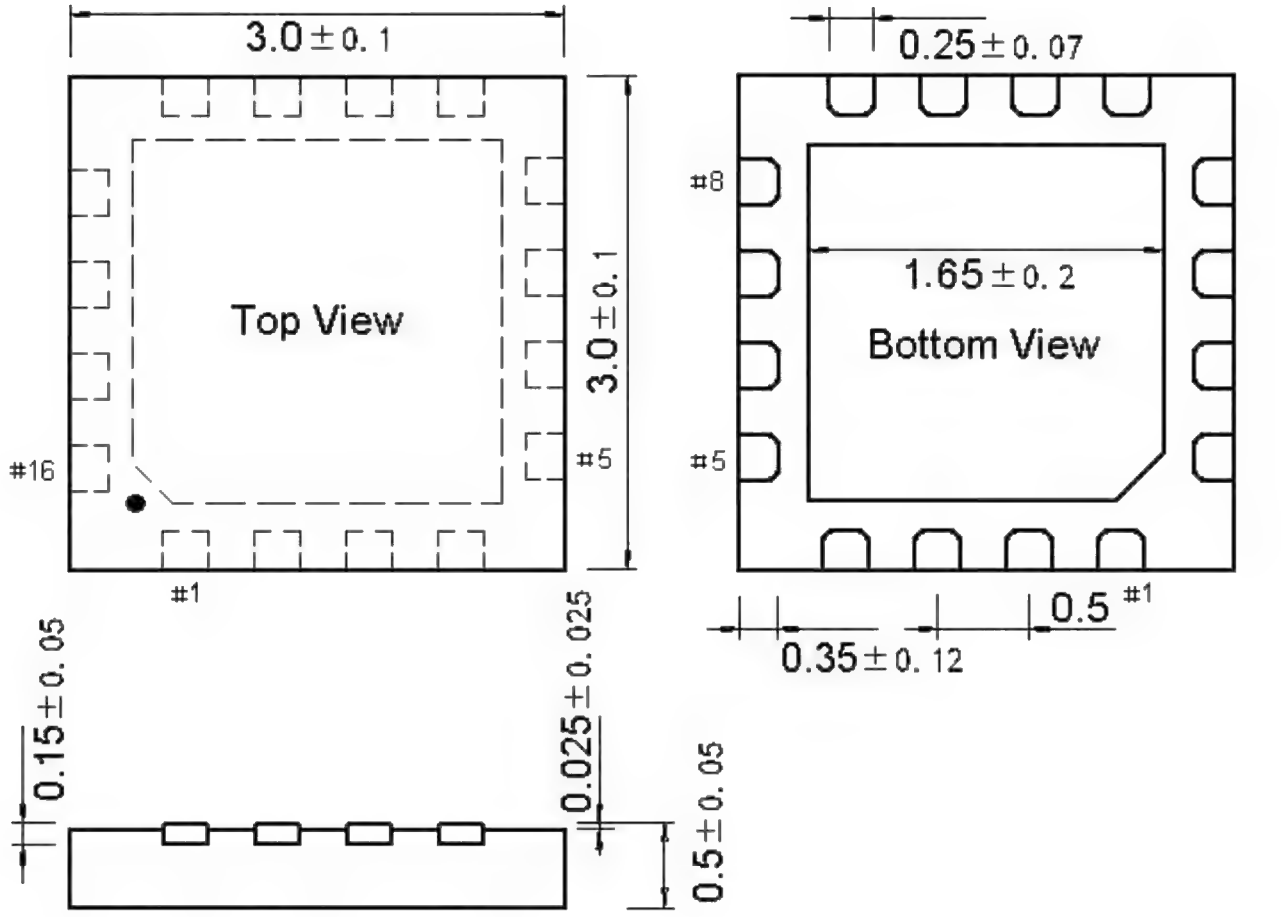
. **QFN16C2 (QFN16C-2*2*0.55-0.4)**



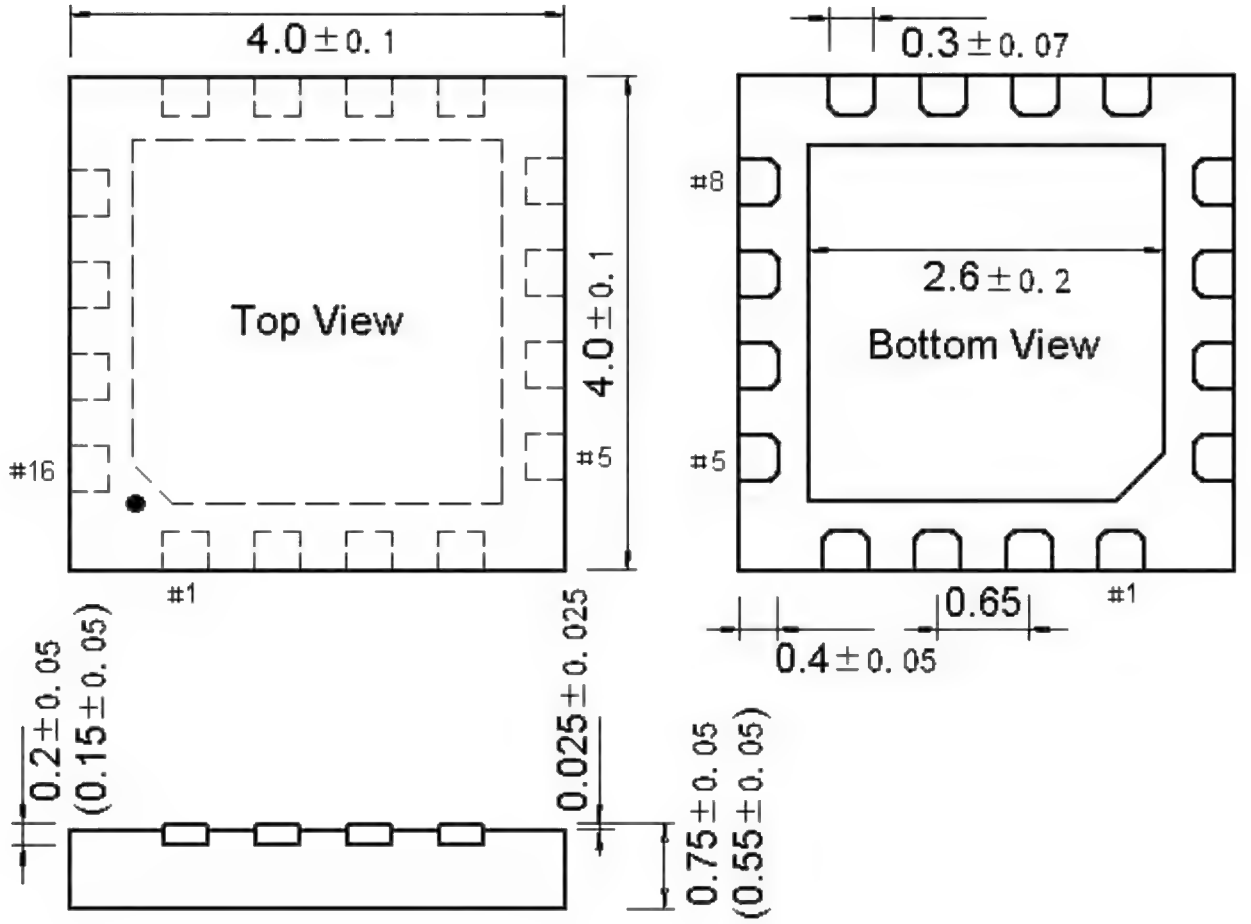
. **QFN16 (QFN16-3*3)**



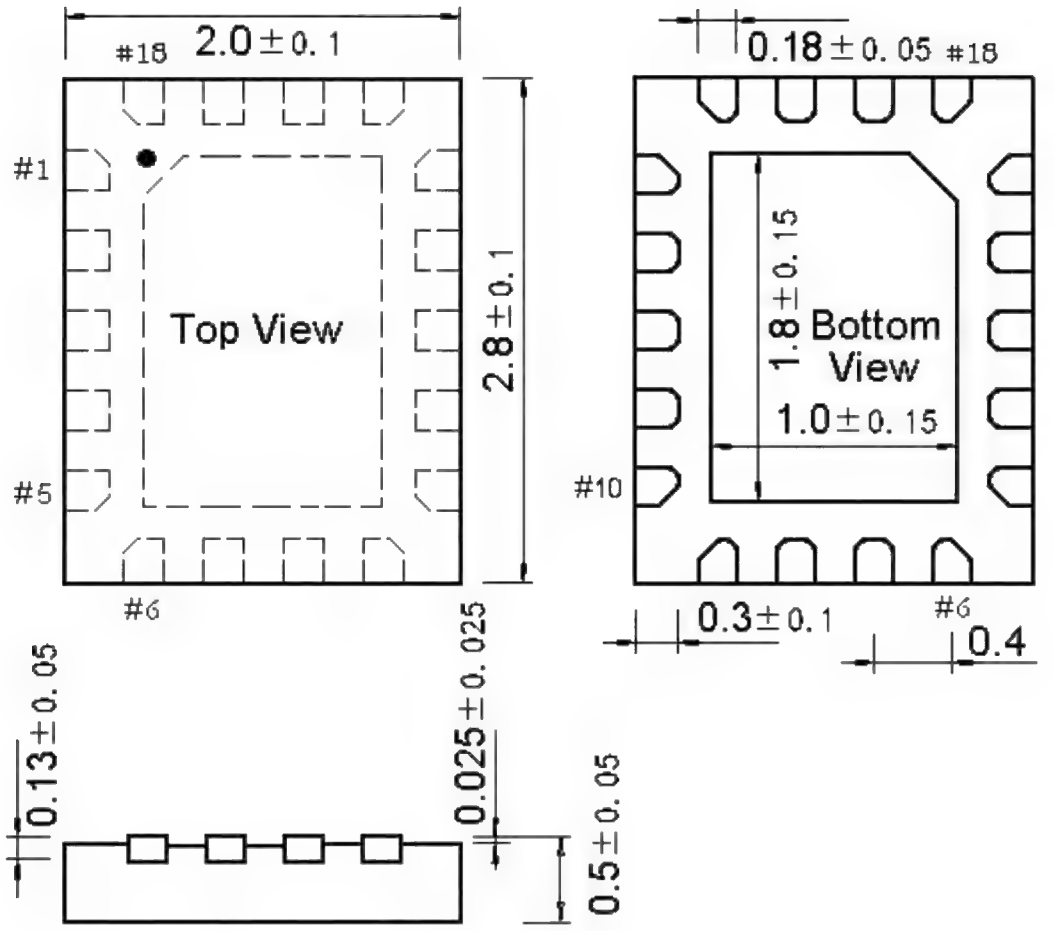
. **QFN16-3*3*0.5-0.4**



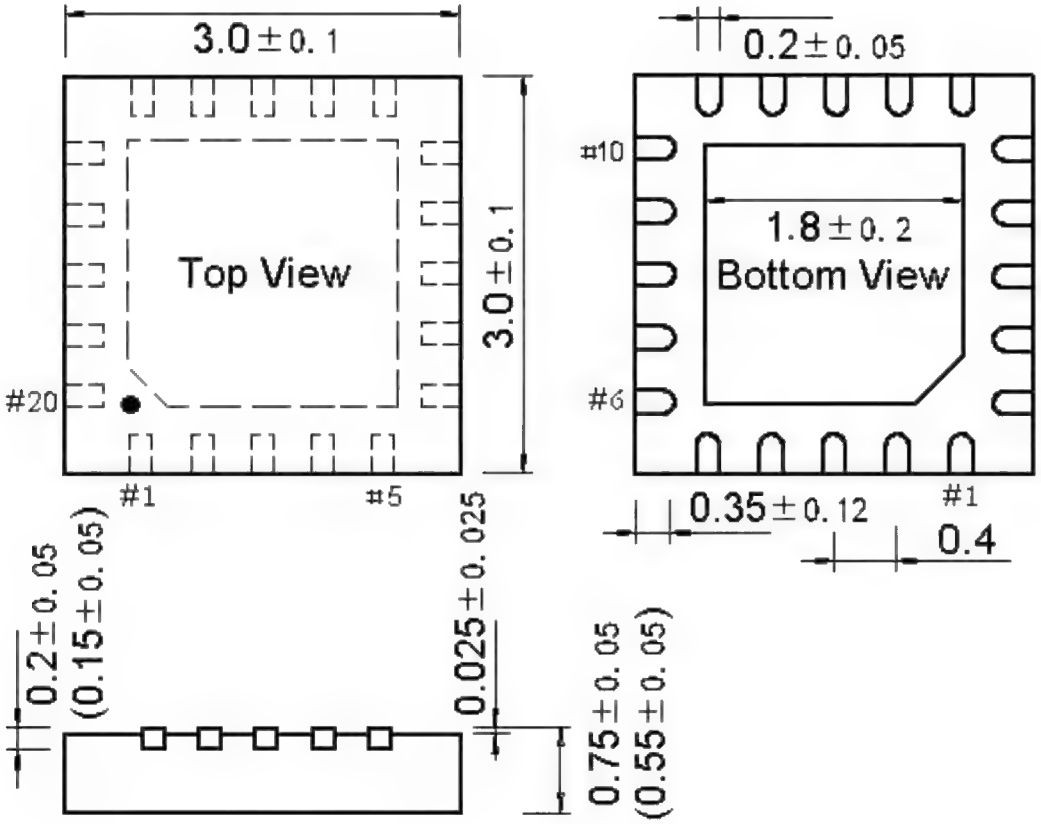
. **QFN16X4 (QFN16-4*4)**



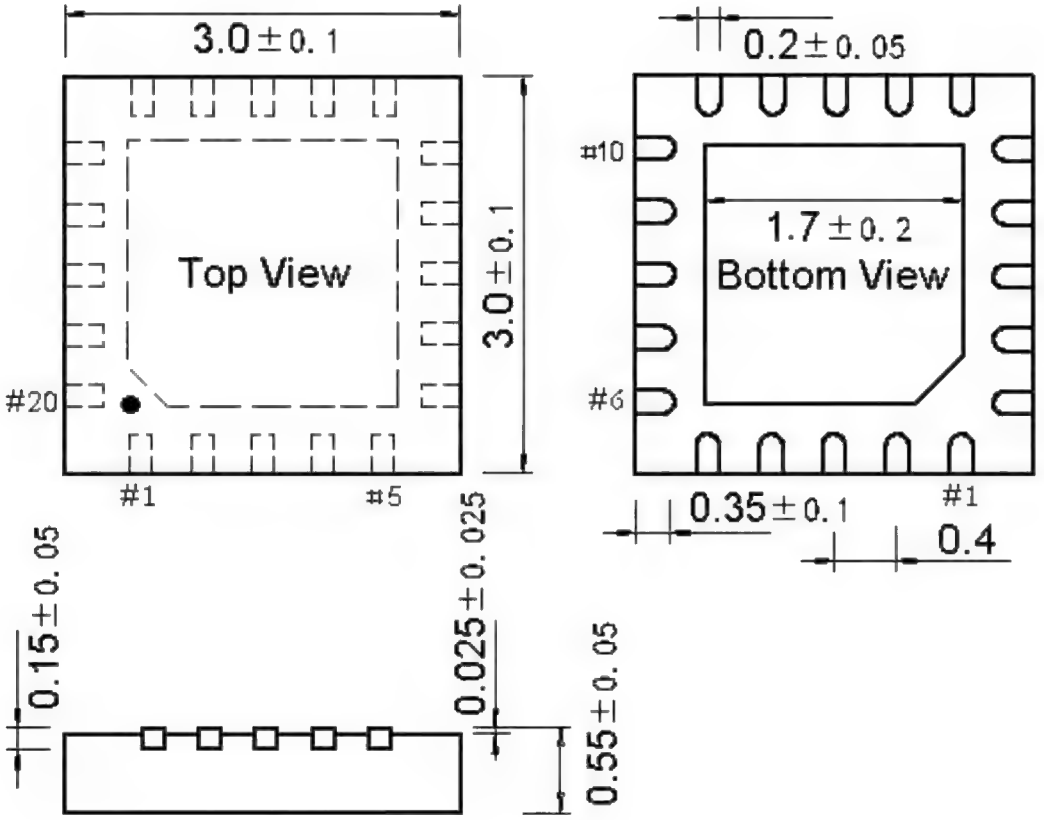
. **QFN18X2X28 (QFN18-2*2.8*0.5-0.4)**



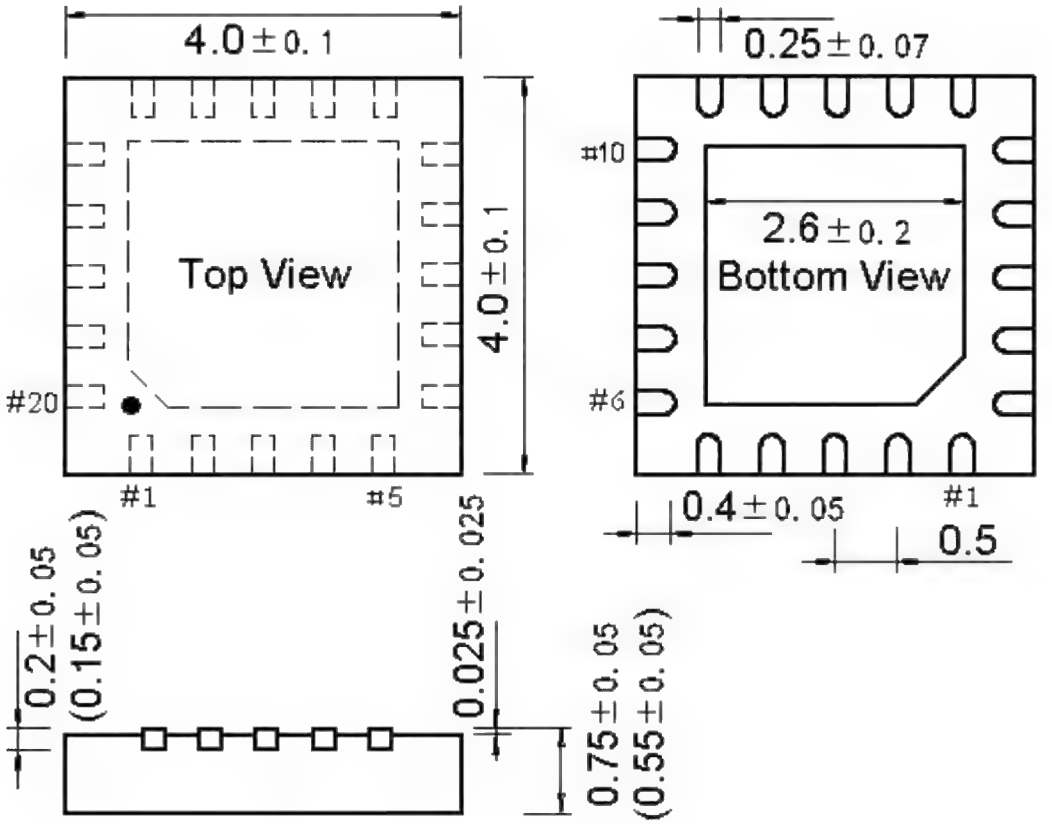
- **QFN20 (QFN20-3*3)**



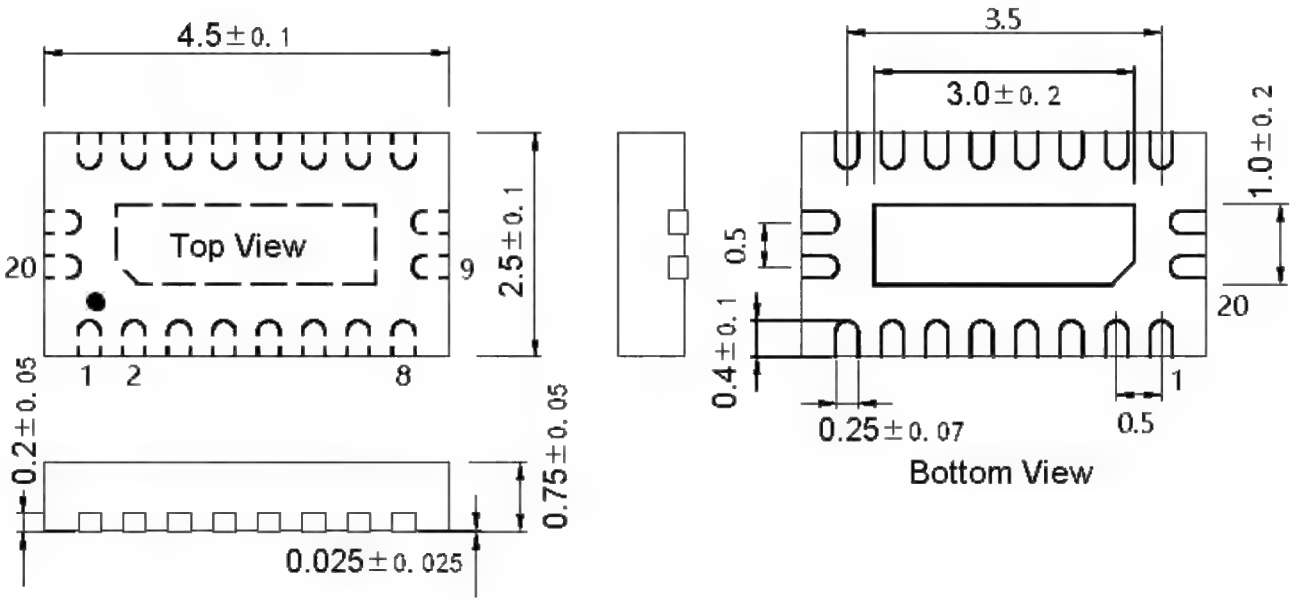
. **QFN20-3*3*0.55-0.4**



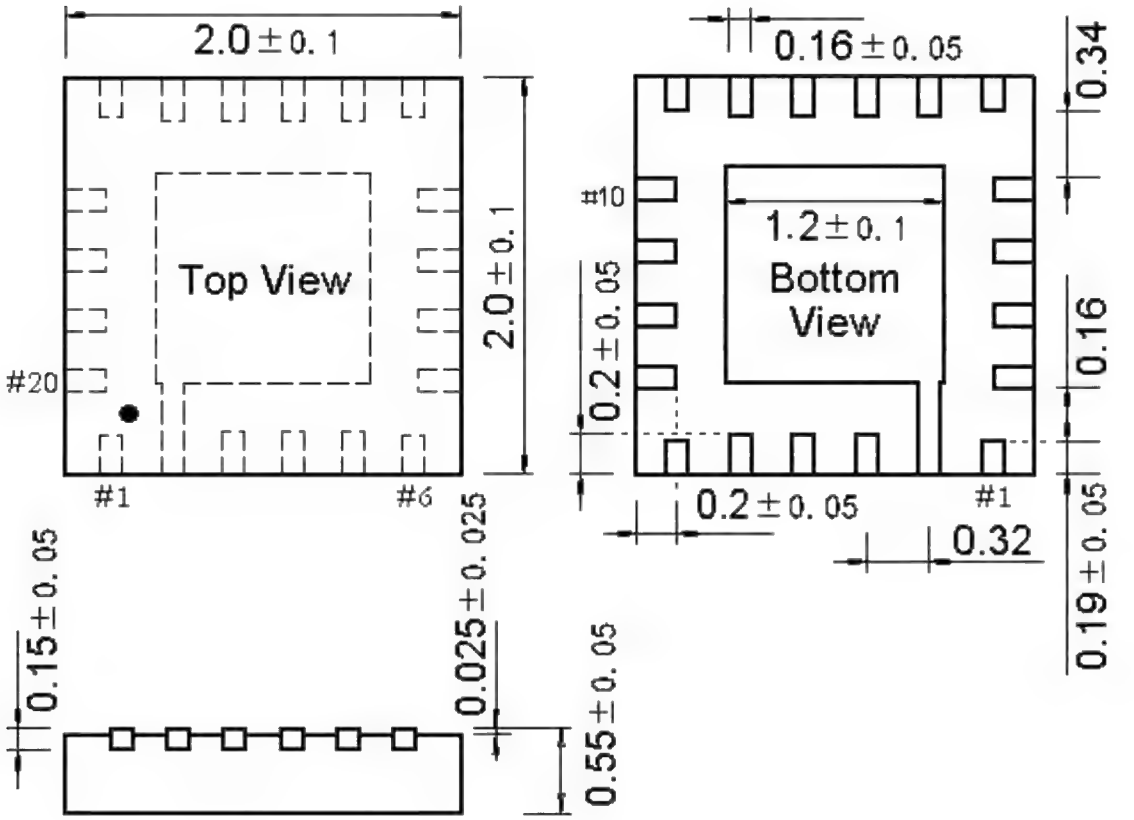
. **QFN20X4 (QFN20-4*4)**



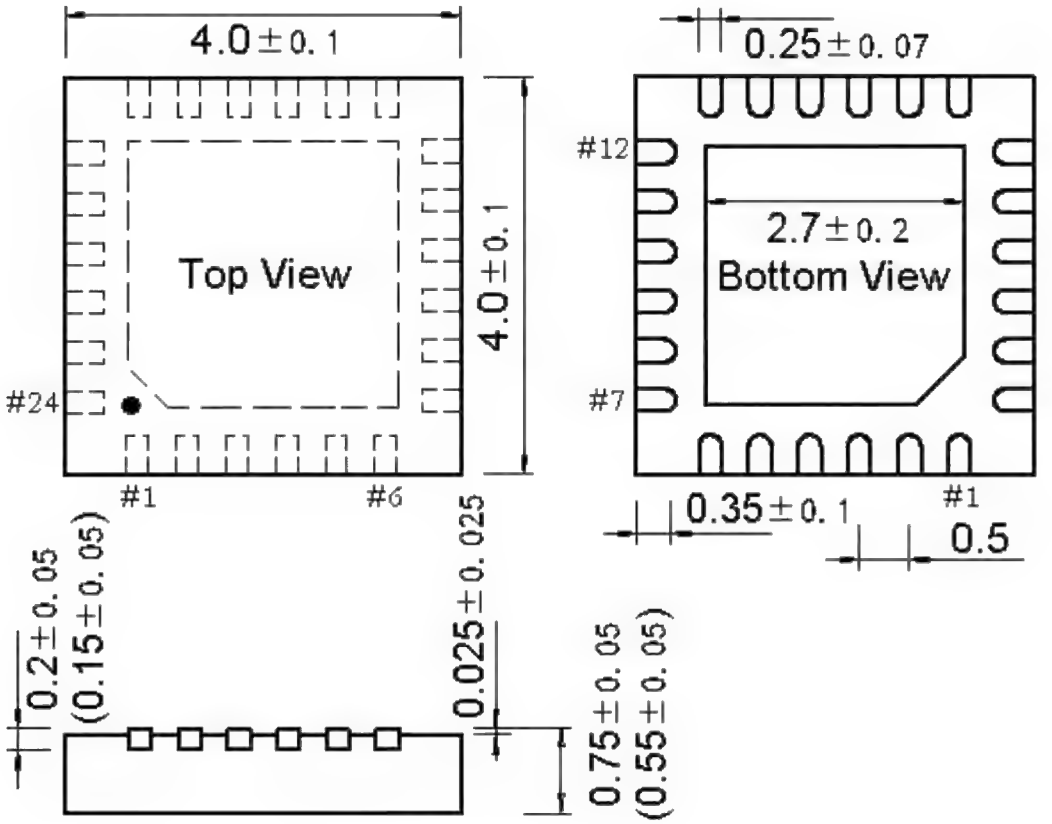
. **QFN20X25X45 (QFN20-2.5*4.5*0.75-0.5)**



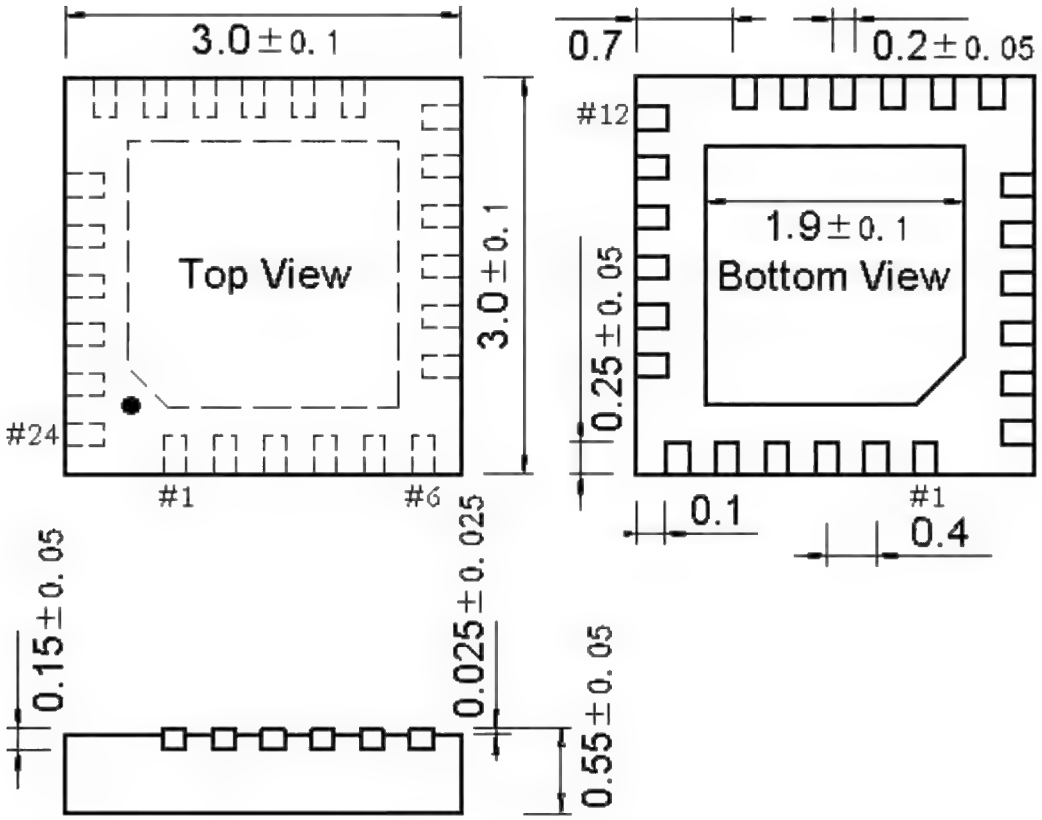
. **QFN20C2 (QFN20C-2*2*0.55-0.32)**



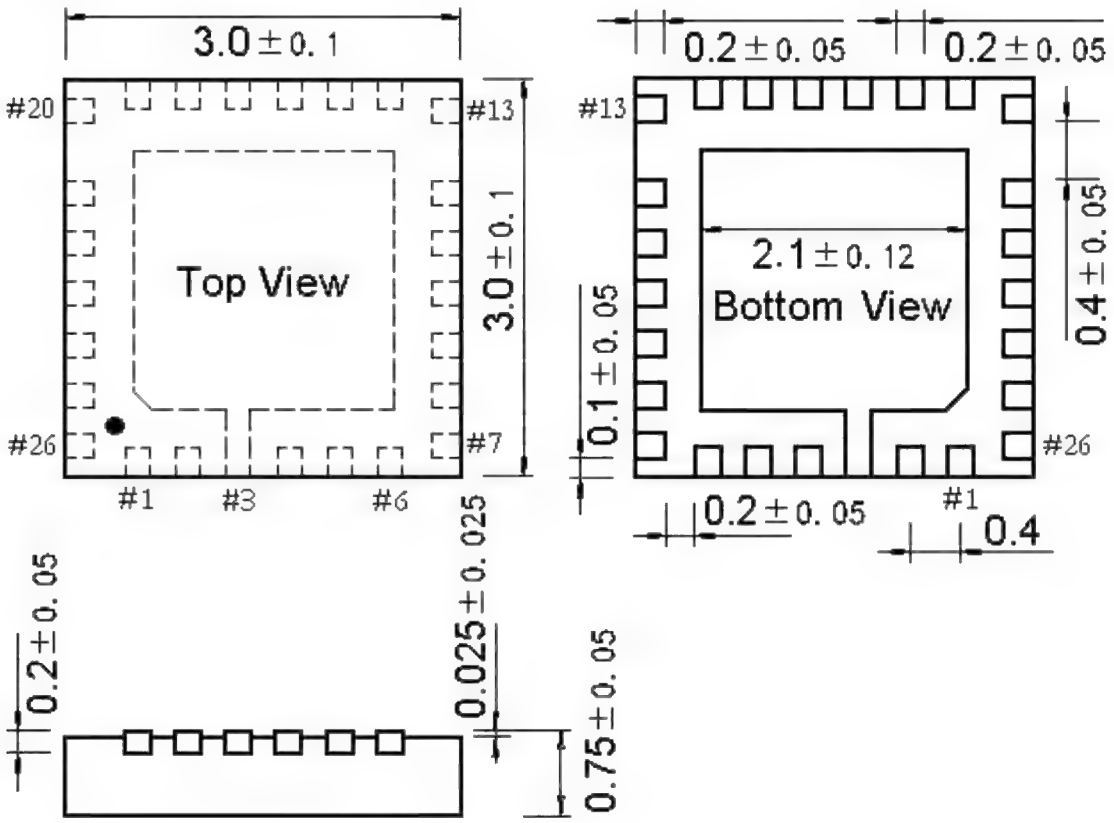
. **QFN24 (QFN24-4*4)**



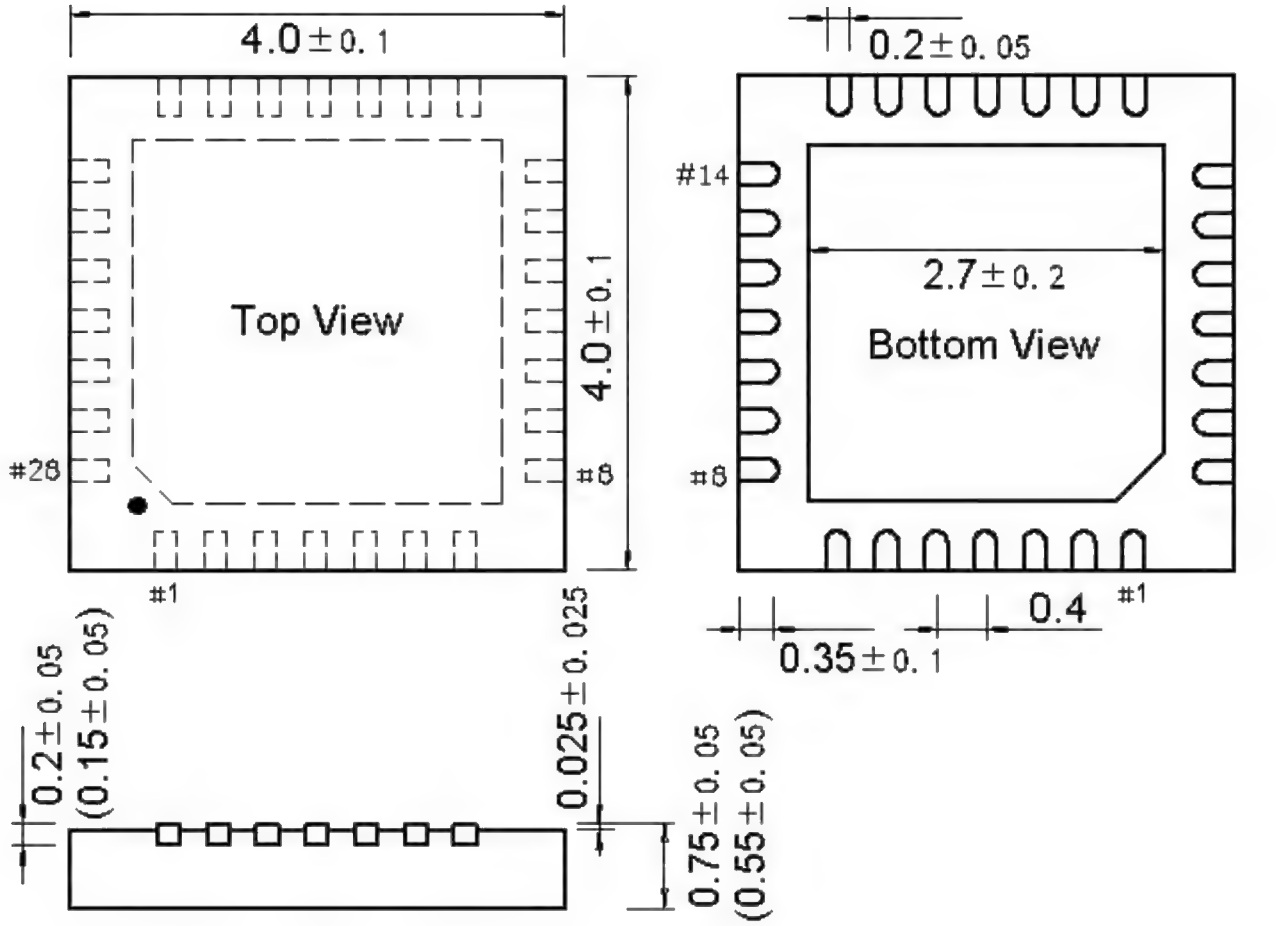
. **QFN24X3 (QFN24-3*3*0.55-0.4)**



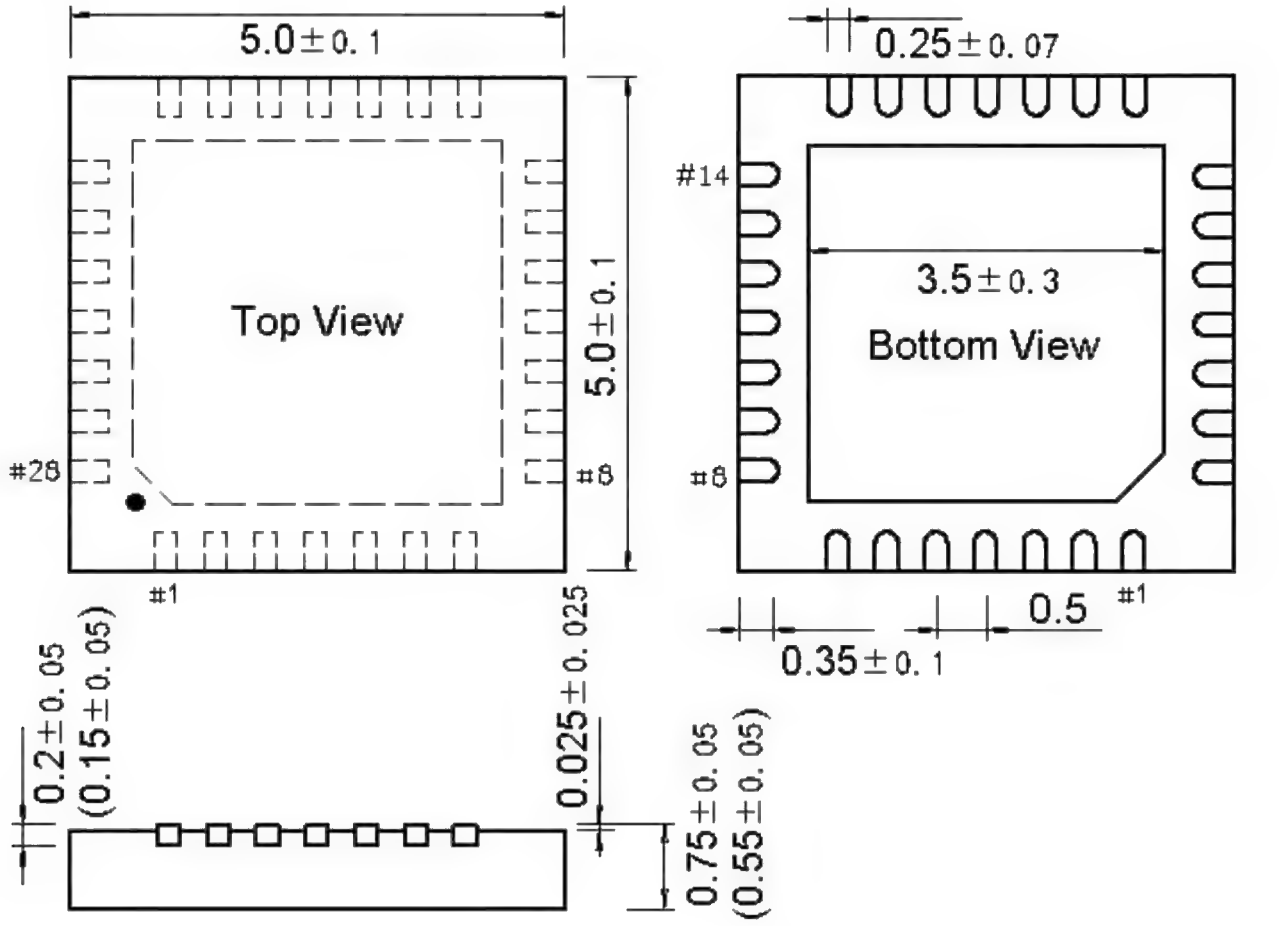
. **QFN26C3 (QFN26C-3*3*0.75-0.4)**



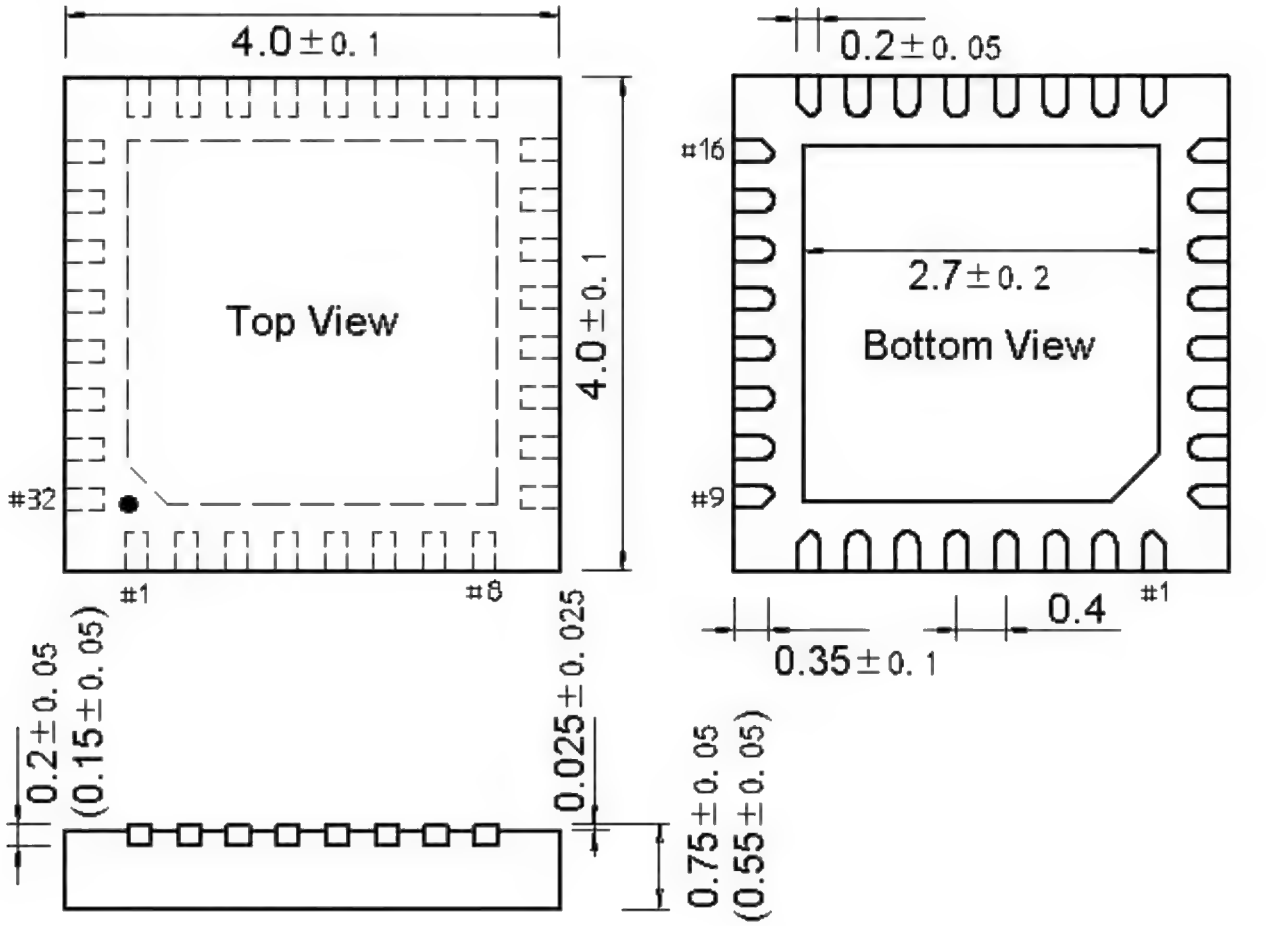
. **QFN28 (QFN28-4*4)**



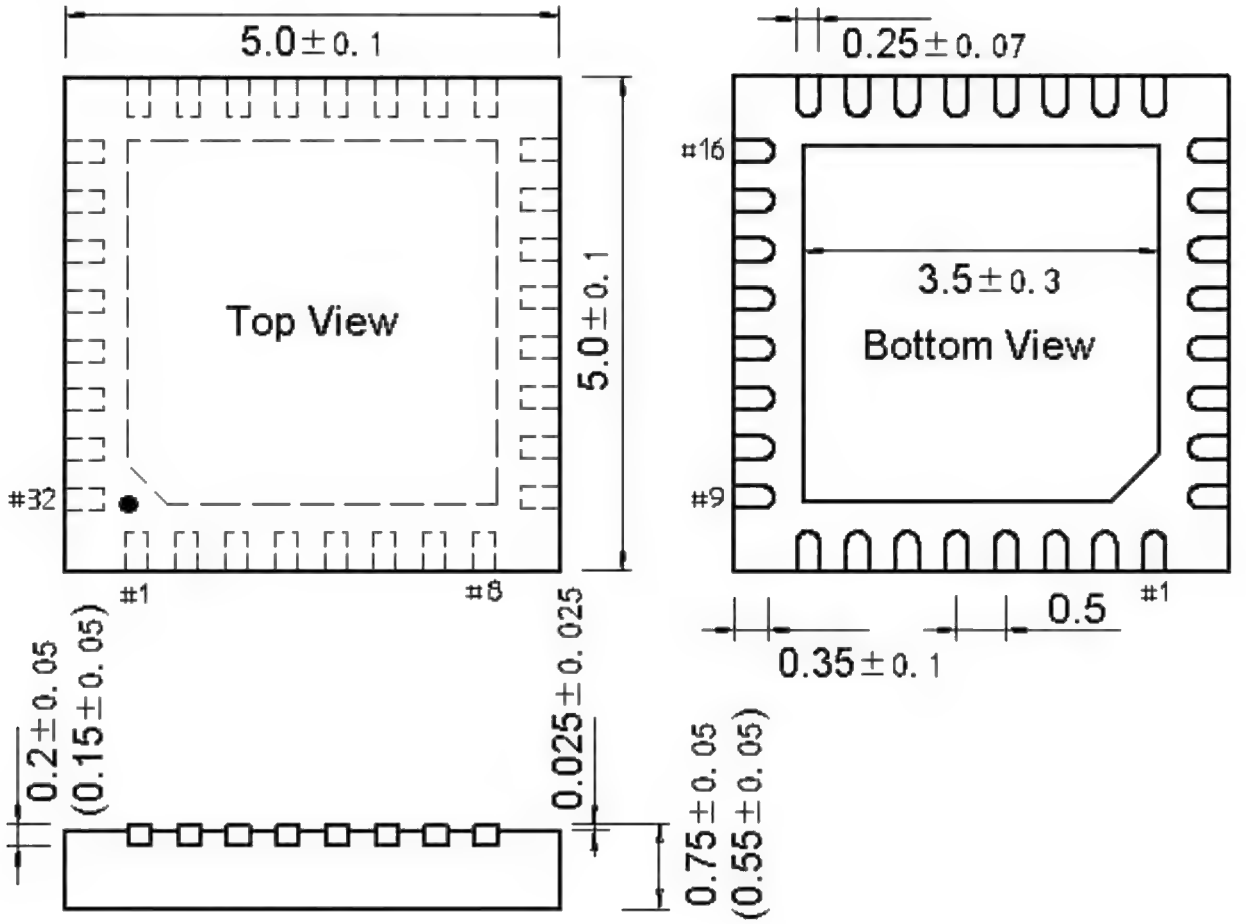
. **QFN28X5 (QFN28-5*5)**



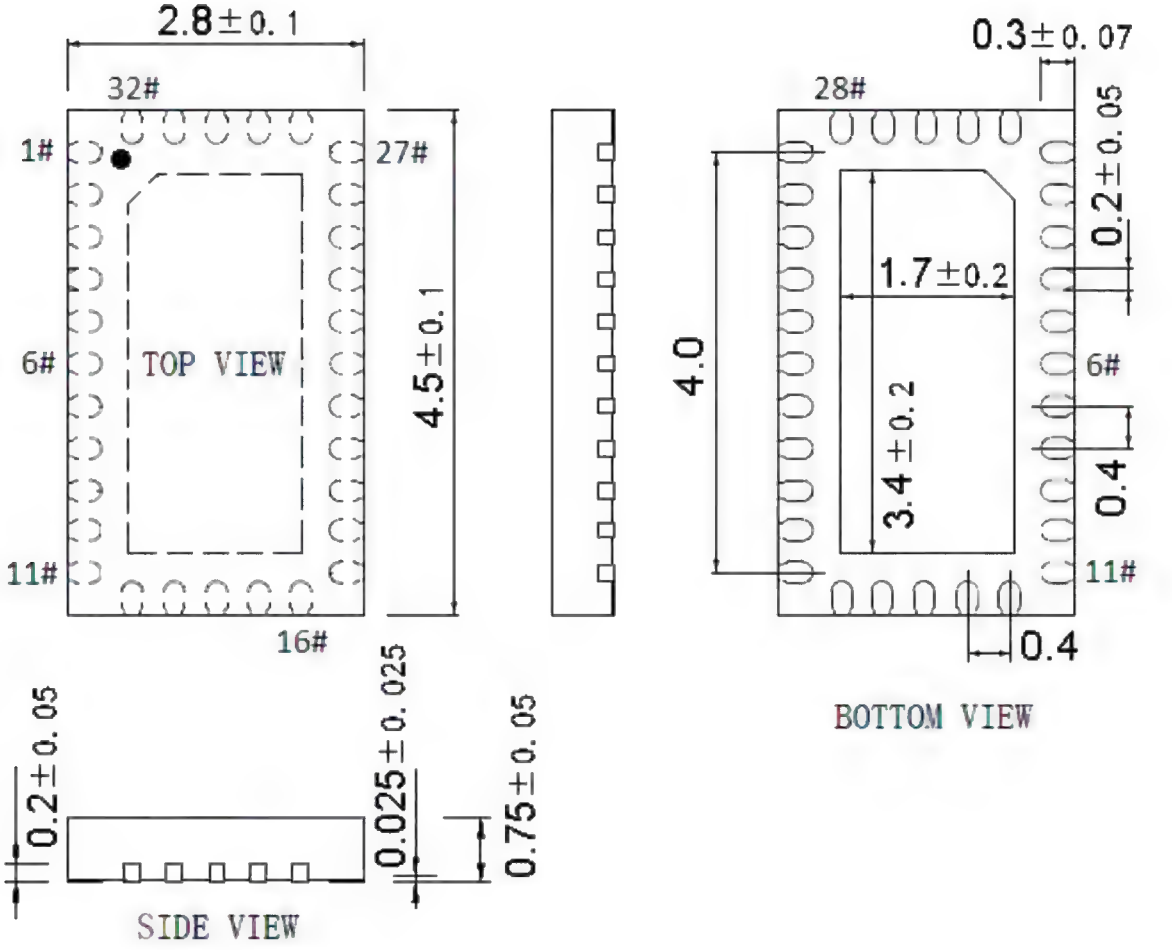
. **QFN32 (QFN32-4*4)**



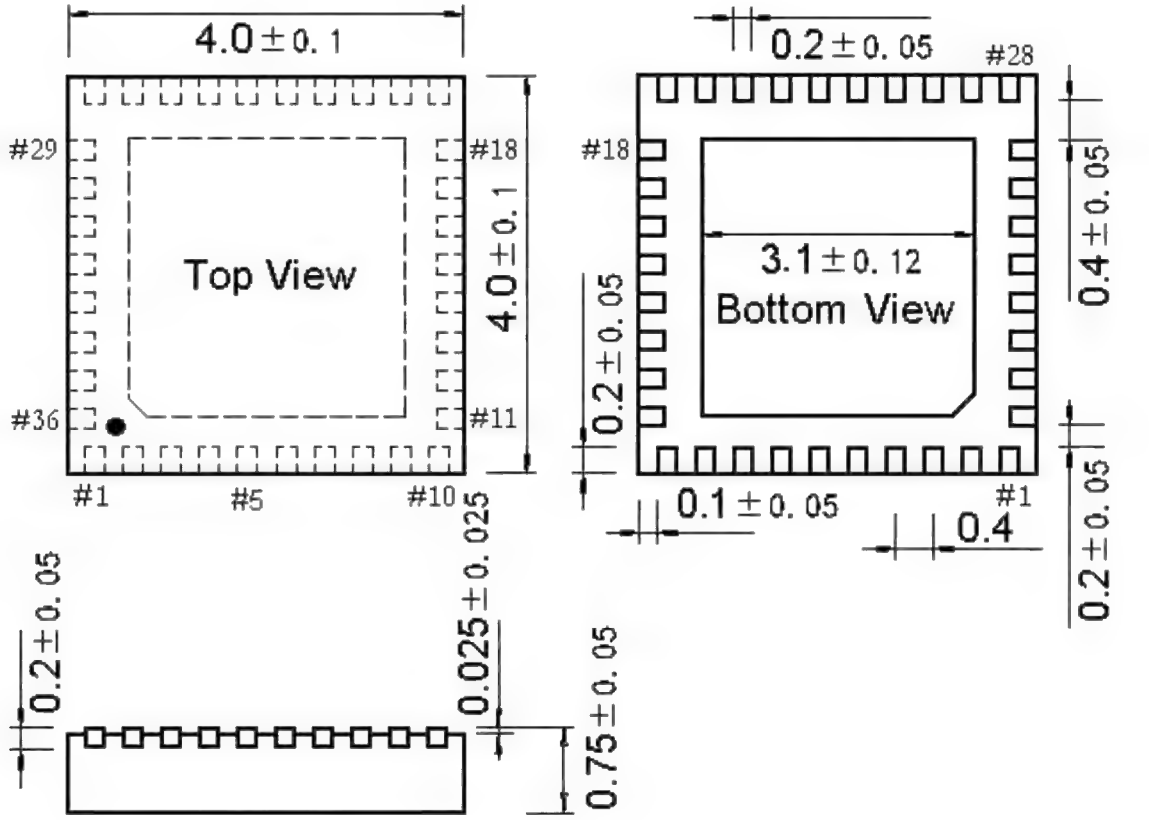
. **QFN32X5 (QFN32-5*5)**



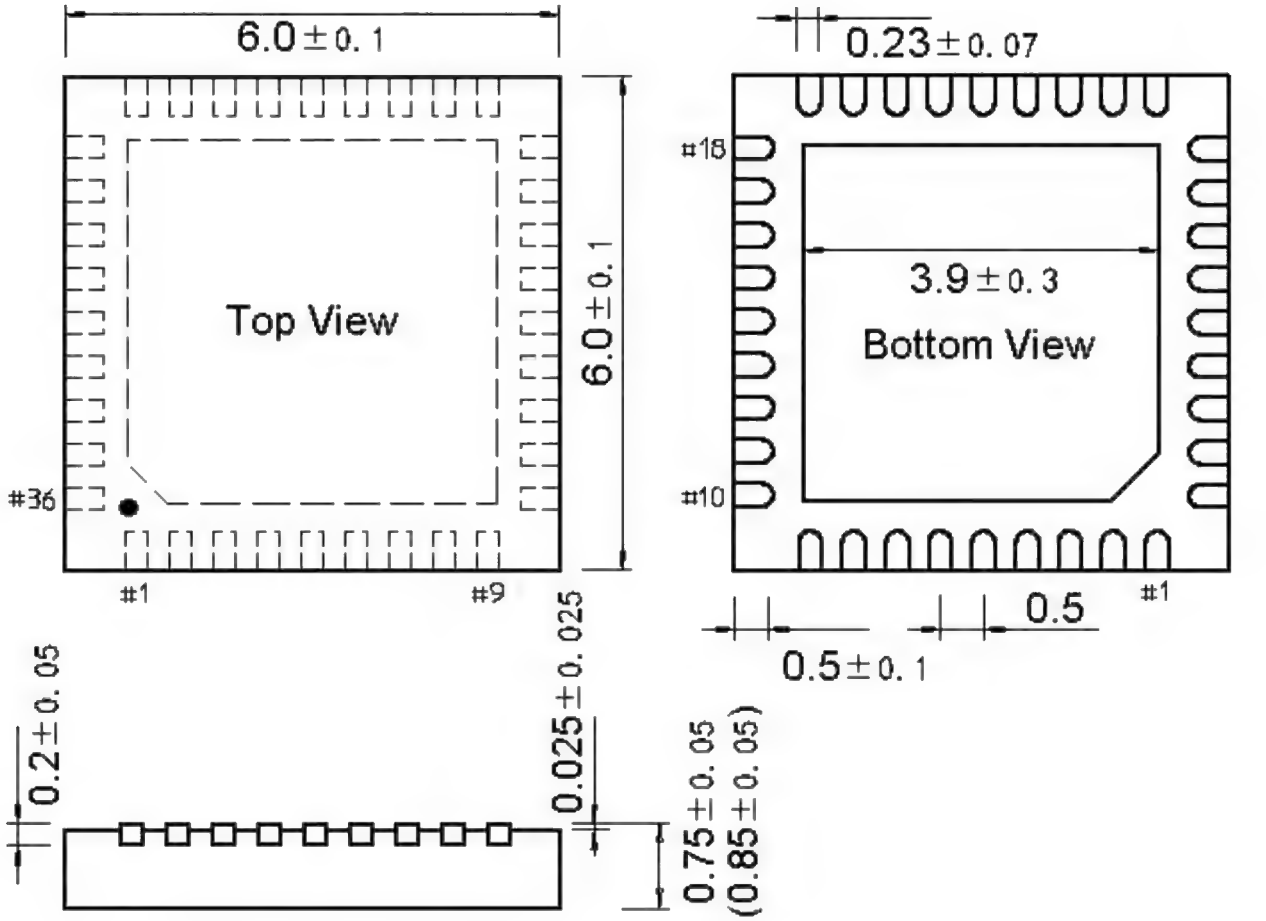
. **QFN32C28X45 (QFN32C-2.8*4.5*0.75-0.4)**



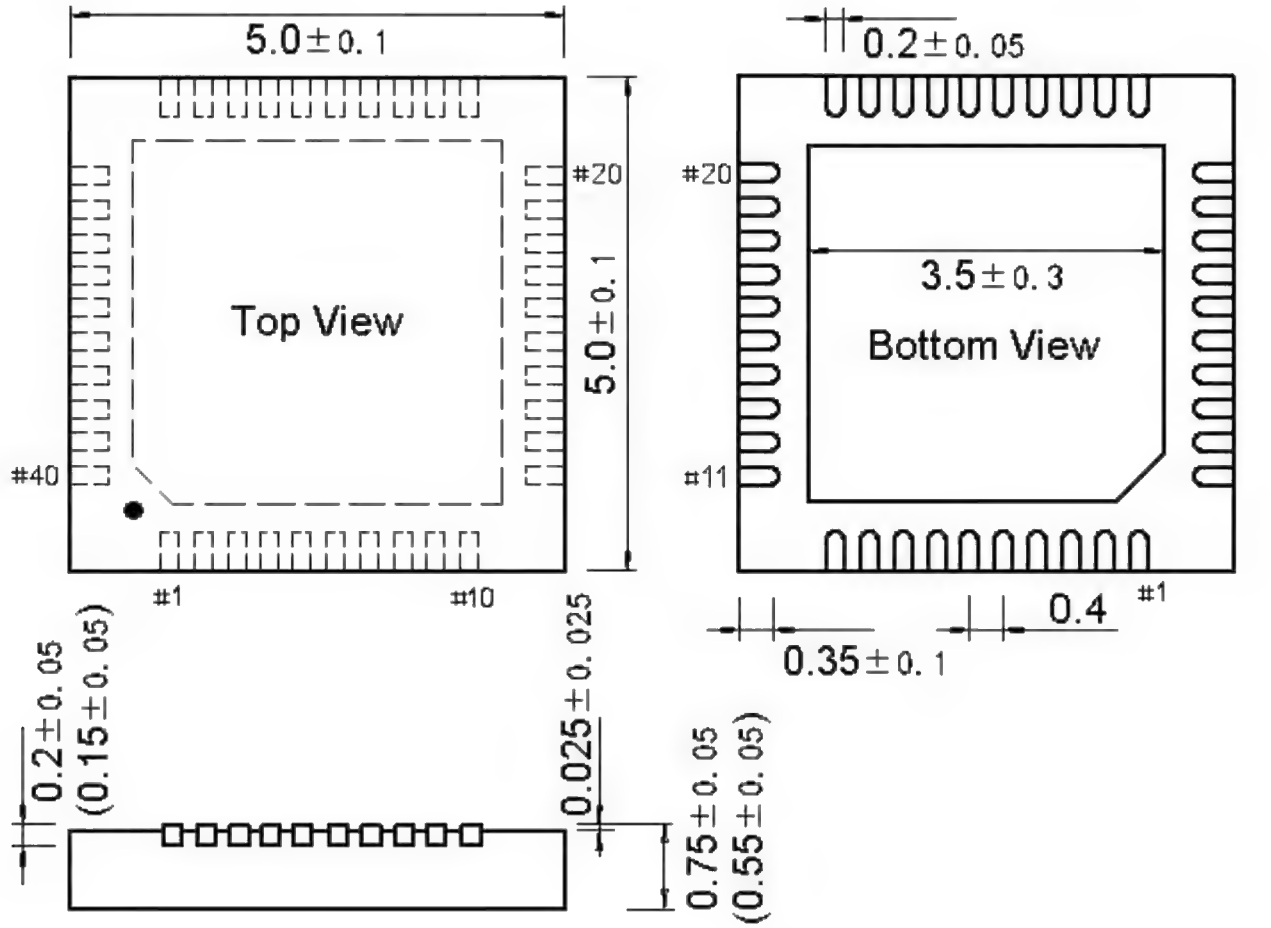
. **QFN36C4 (QFN36C-4*4*0.75-0.4)**



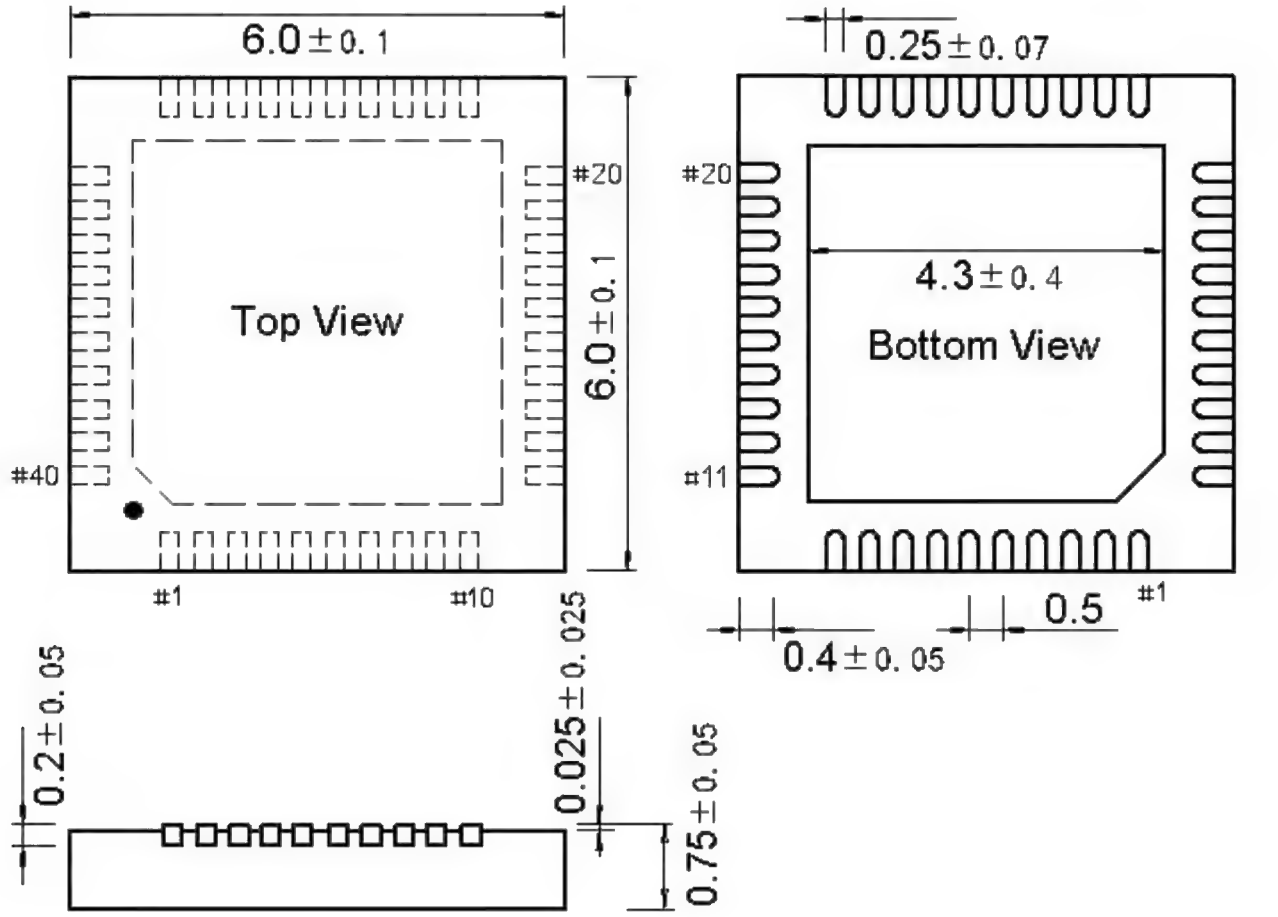
. **QFN36X6 (QFN36-6*6)**



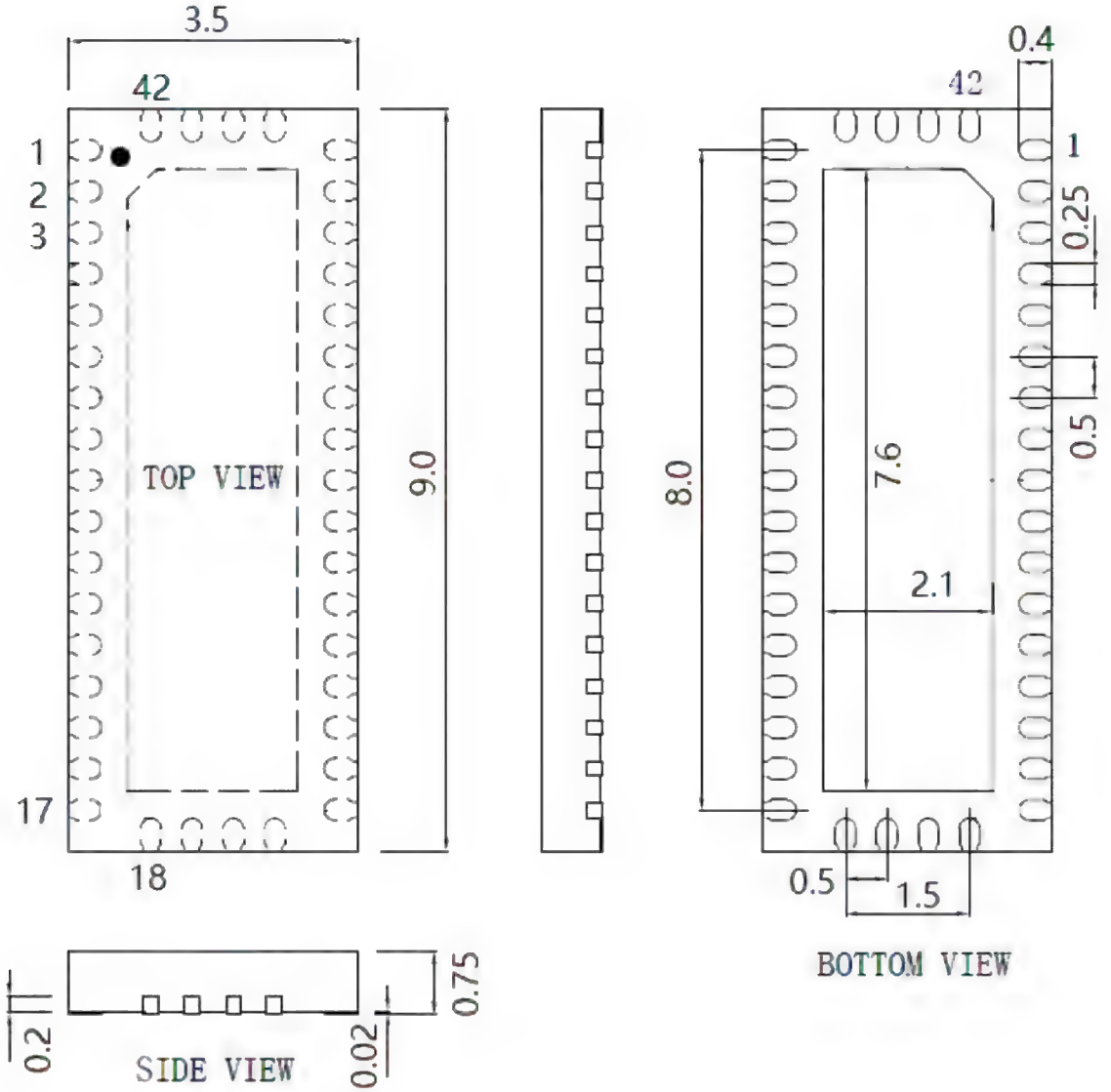
. **QFN40 (QFN40-5*5)**



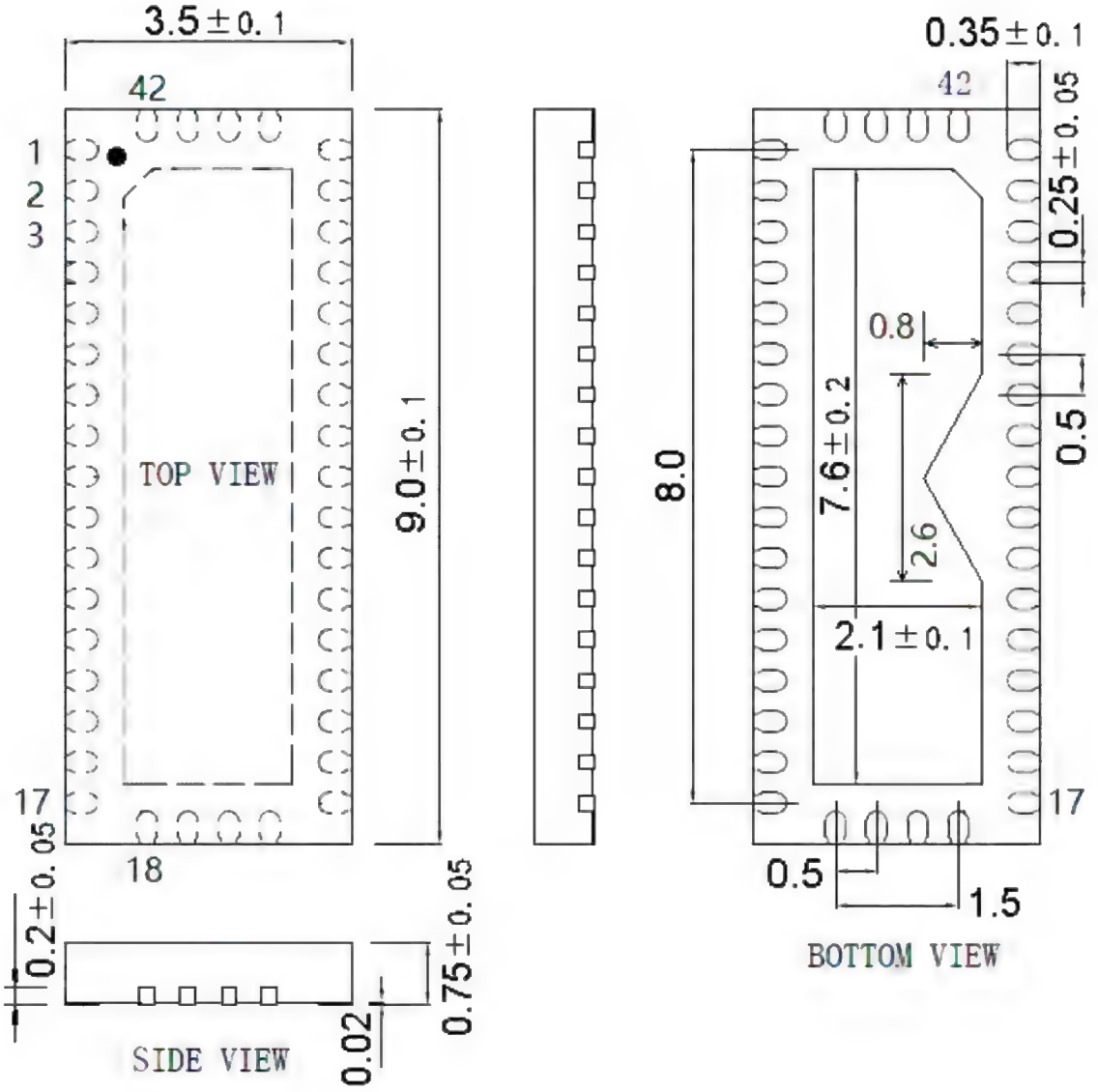
. **QFN40X6 (QFN40-6*6)**



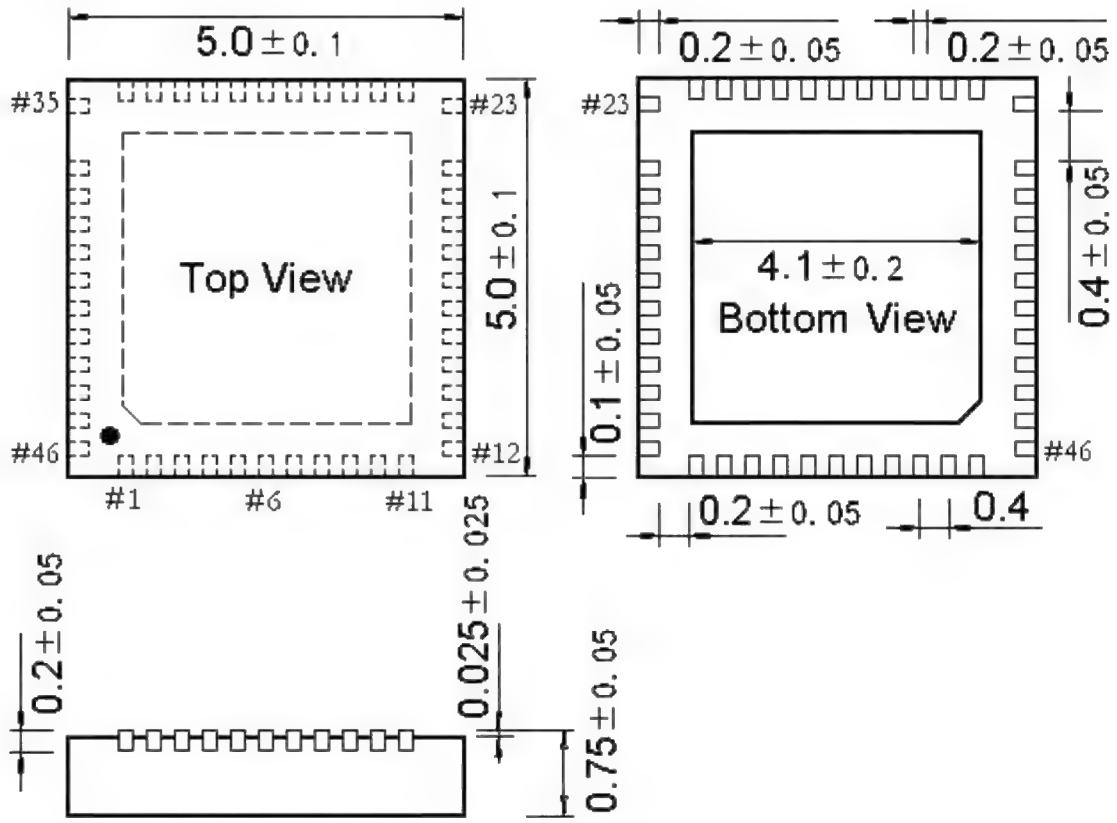
. **QFN42X35X9 (QFN42-3.5*9*0.75-0.5)**



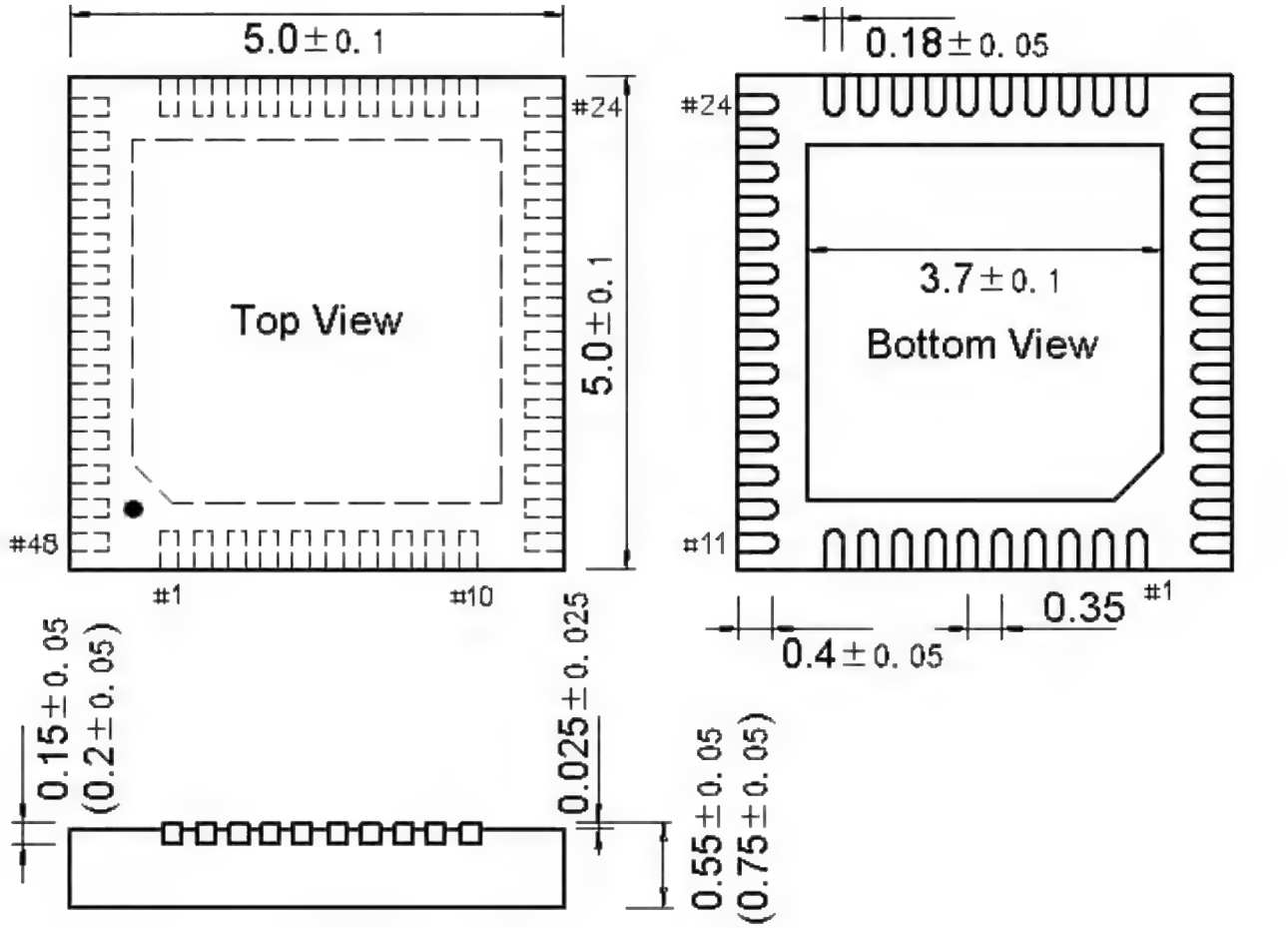
. **QFN42C35X9 (QFN42C-3.5*9*0.75-0.5)**



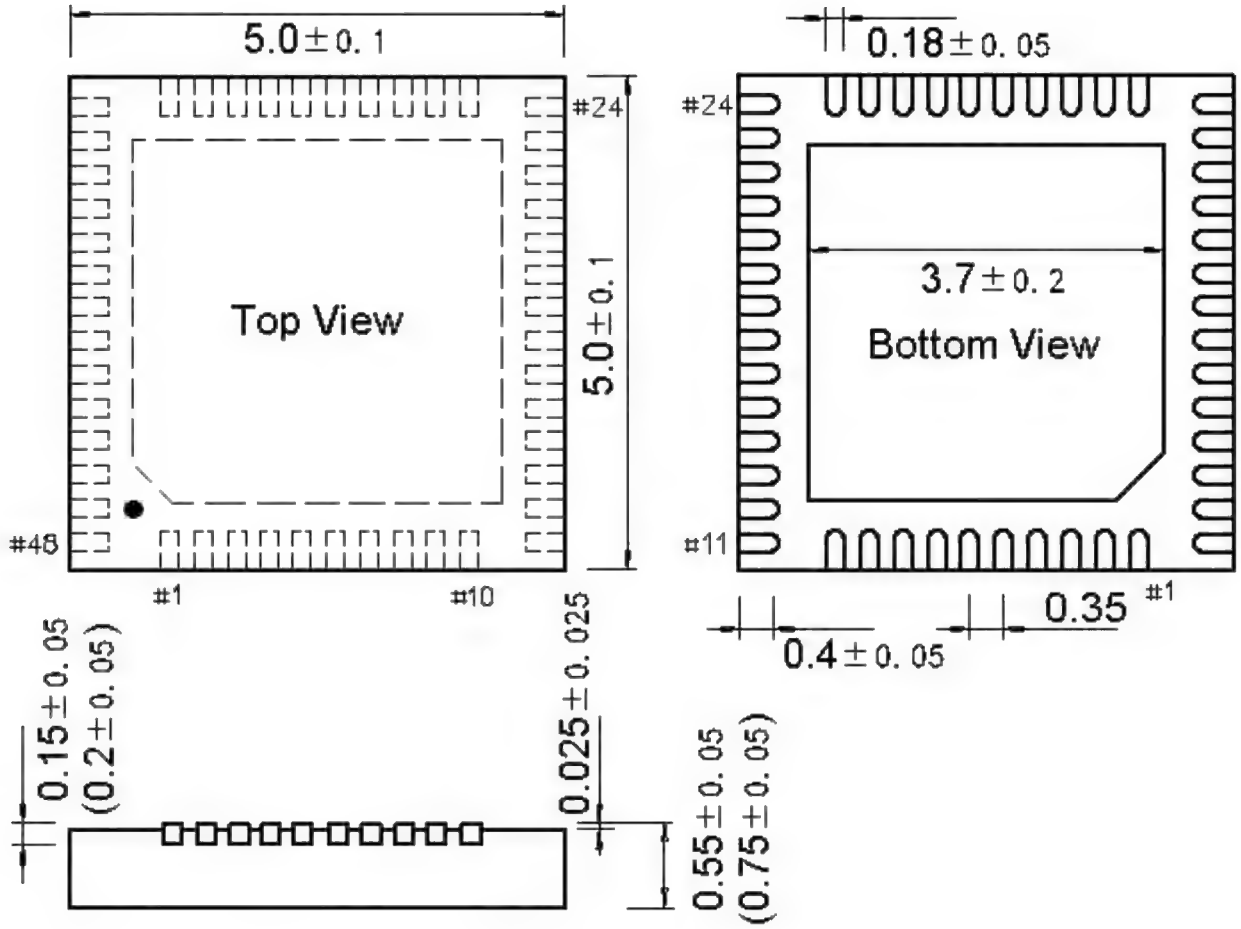
. **QFN46C5 (QFN46C-5*5*0.75-0.4)**



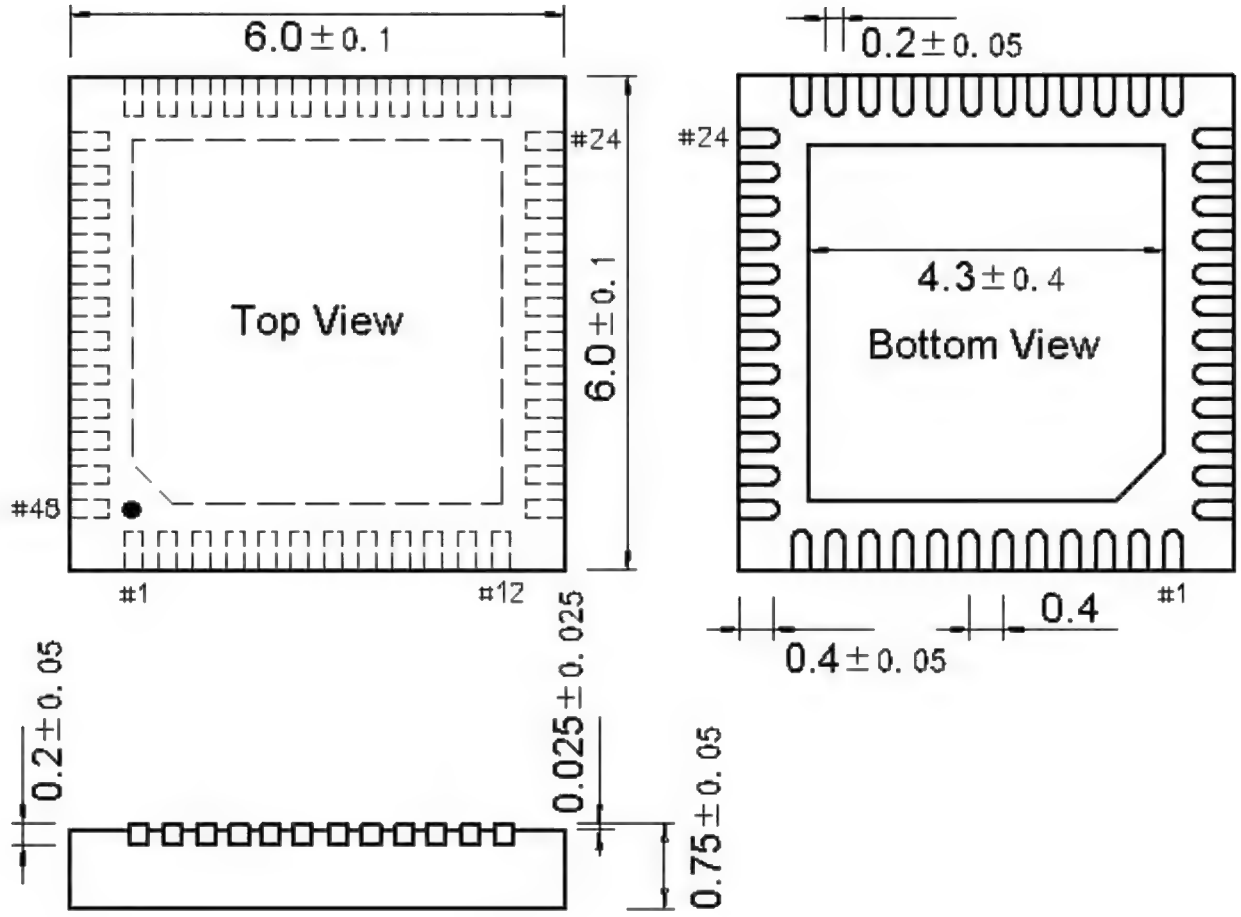
. **QFN48 (QFN48-5*5*0.75-0.35)**



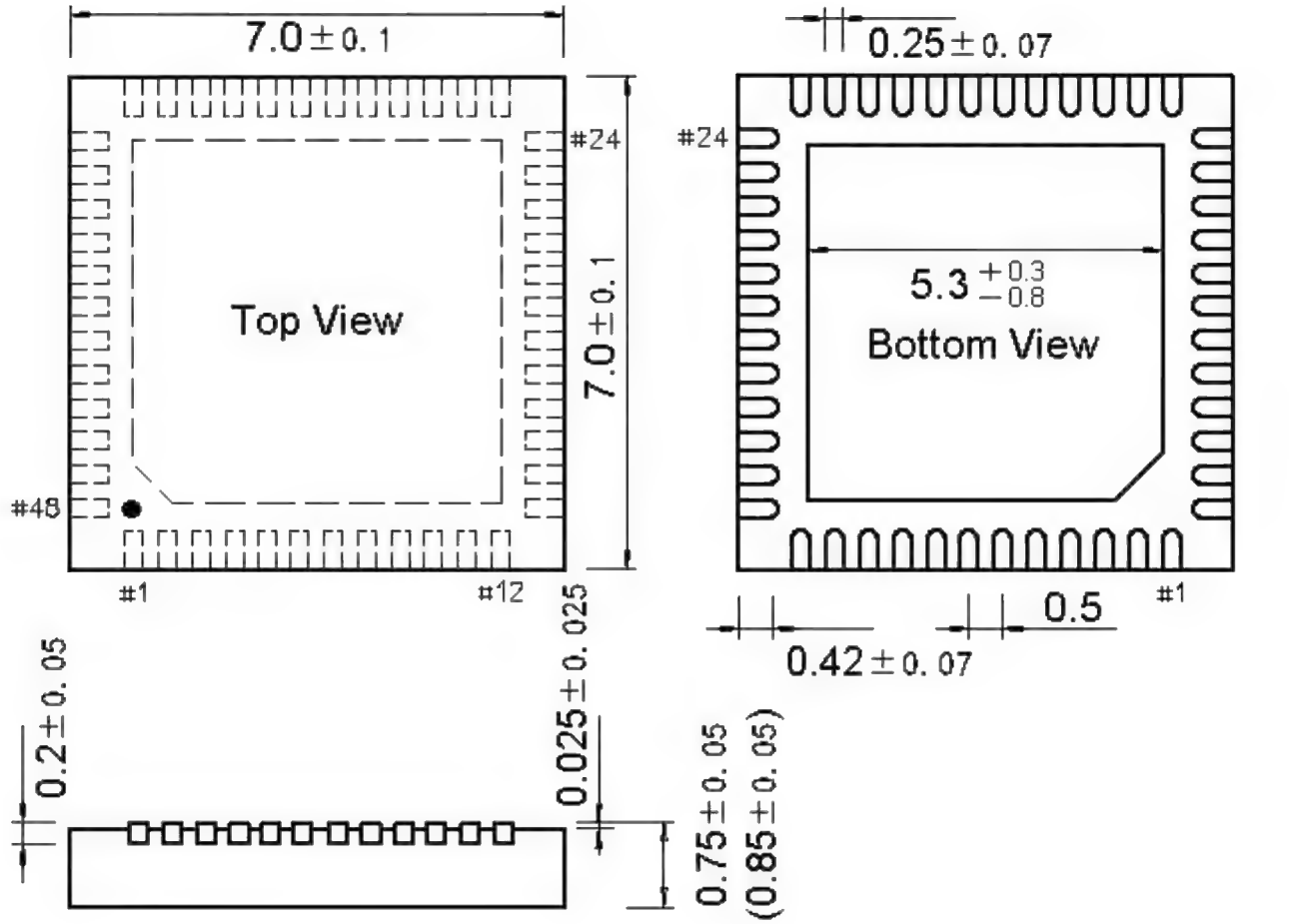
. **QFN48-5*5*0.55-0.35**



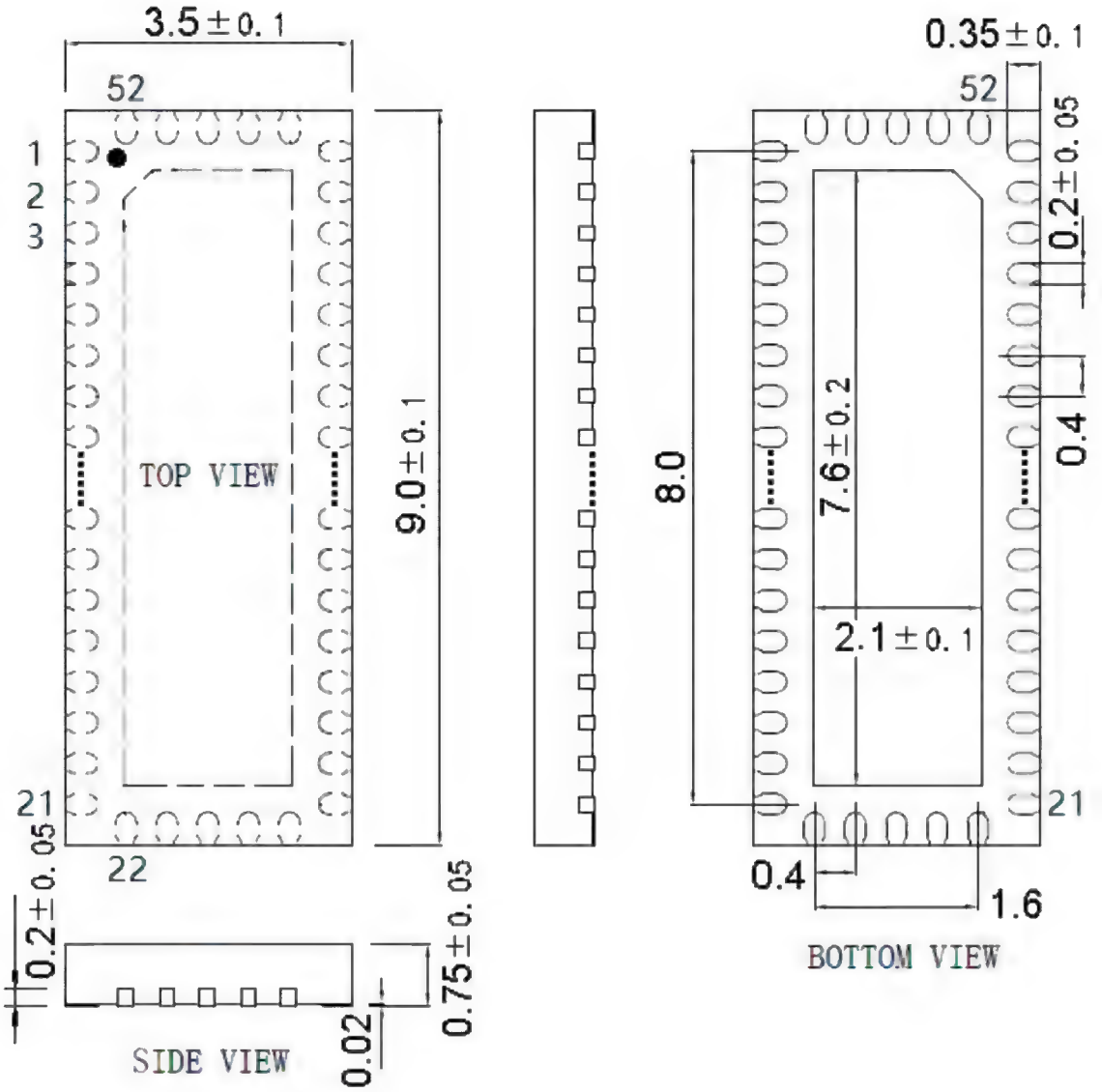
. **QFN48X6 (QFN48-6*6)**



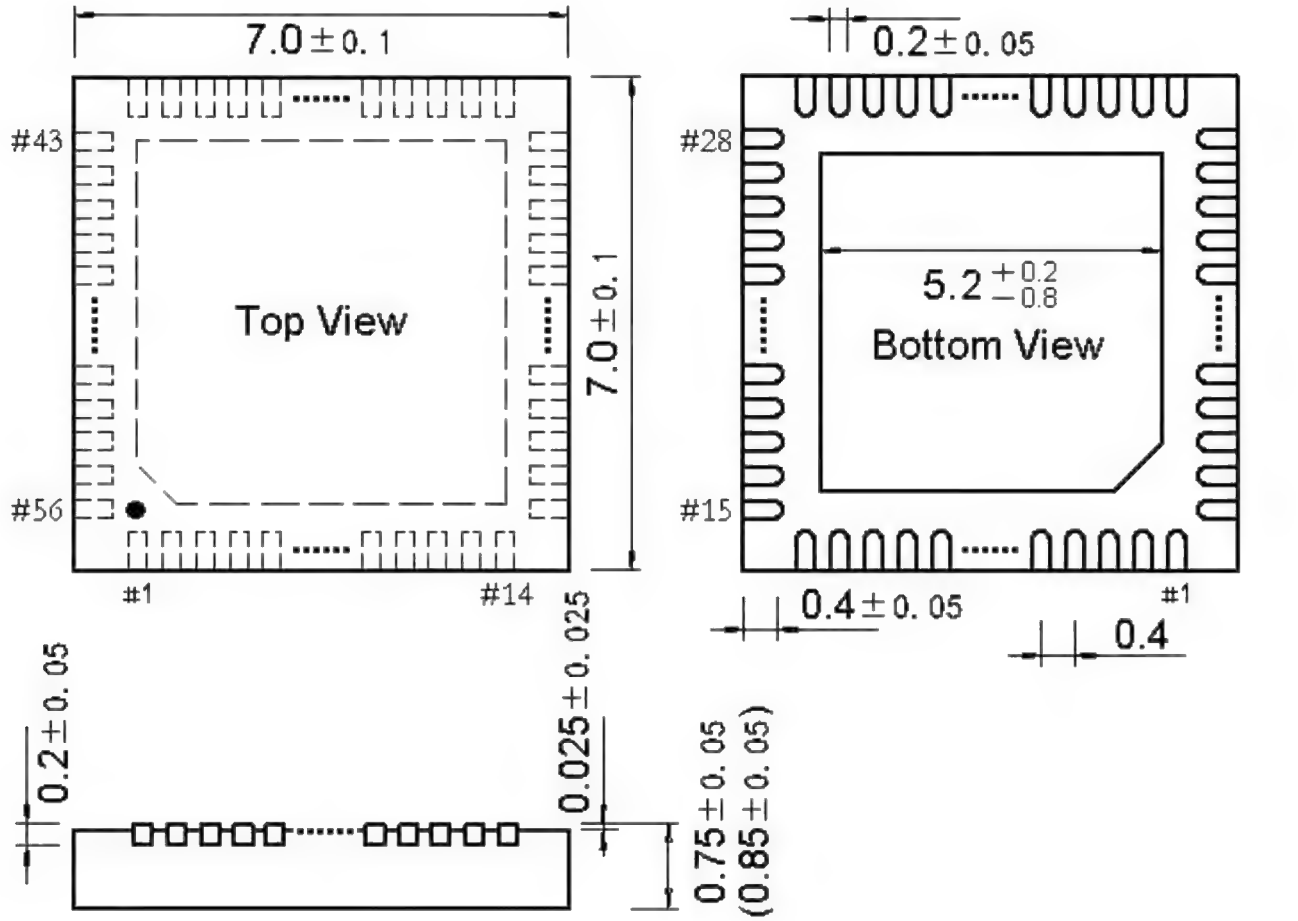
QFN48X7 (QFN48-7*7)



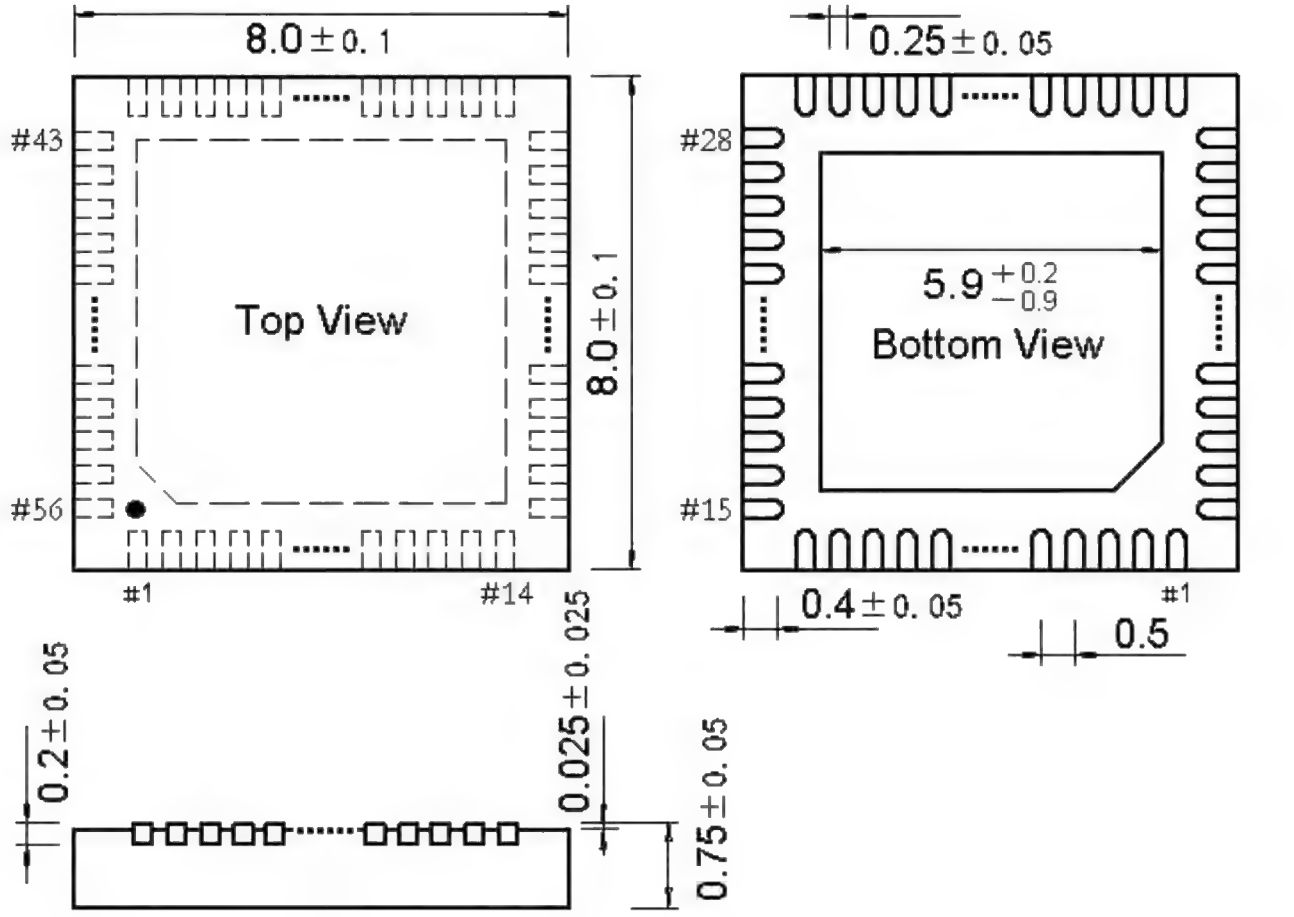
. **QFN52X35X9 (QFN52-3.5*9*0.75-0.4)**



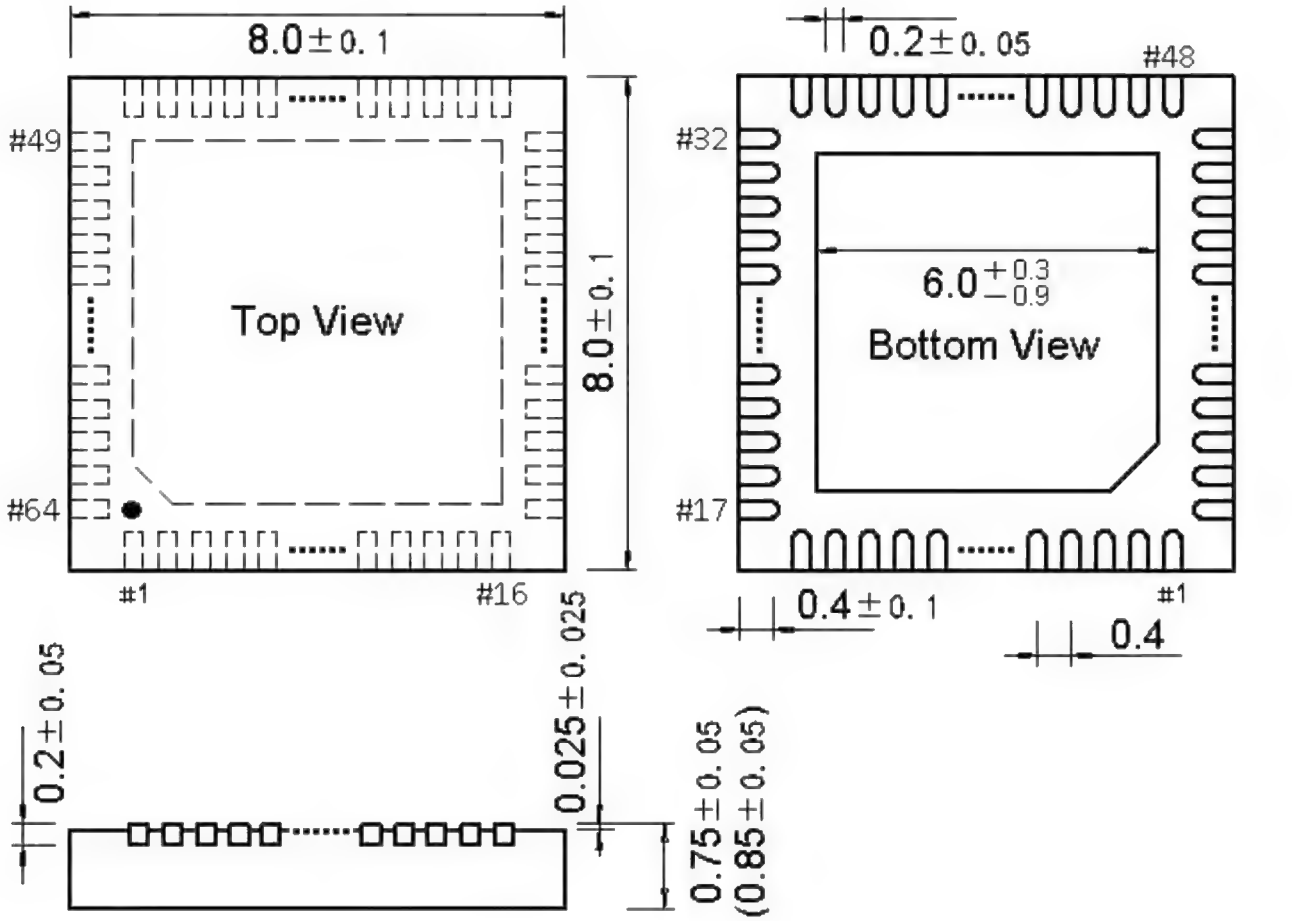
. **QFN56 (QFN56-7*7)**



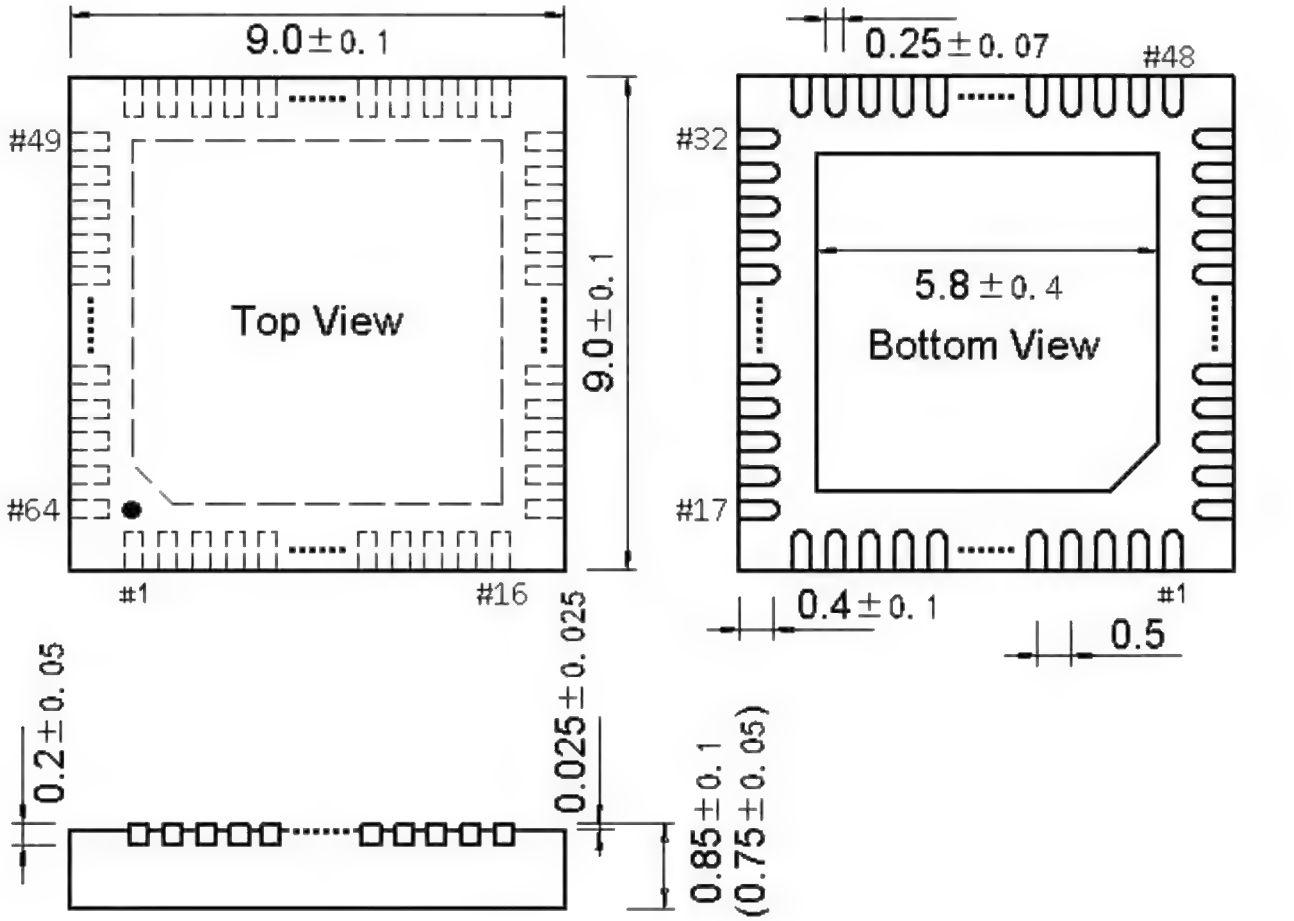
. **QFN56X8 (QFN56-8*8)**



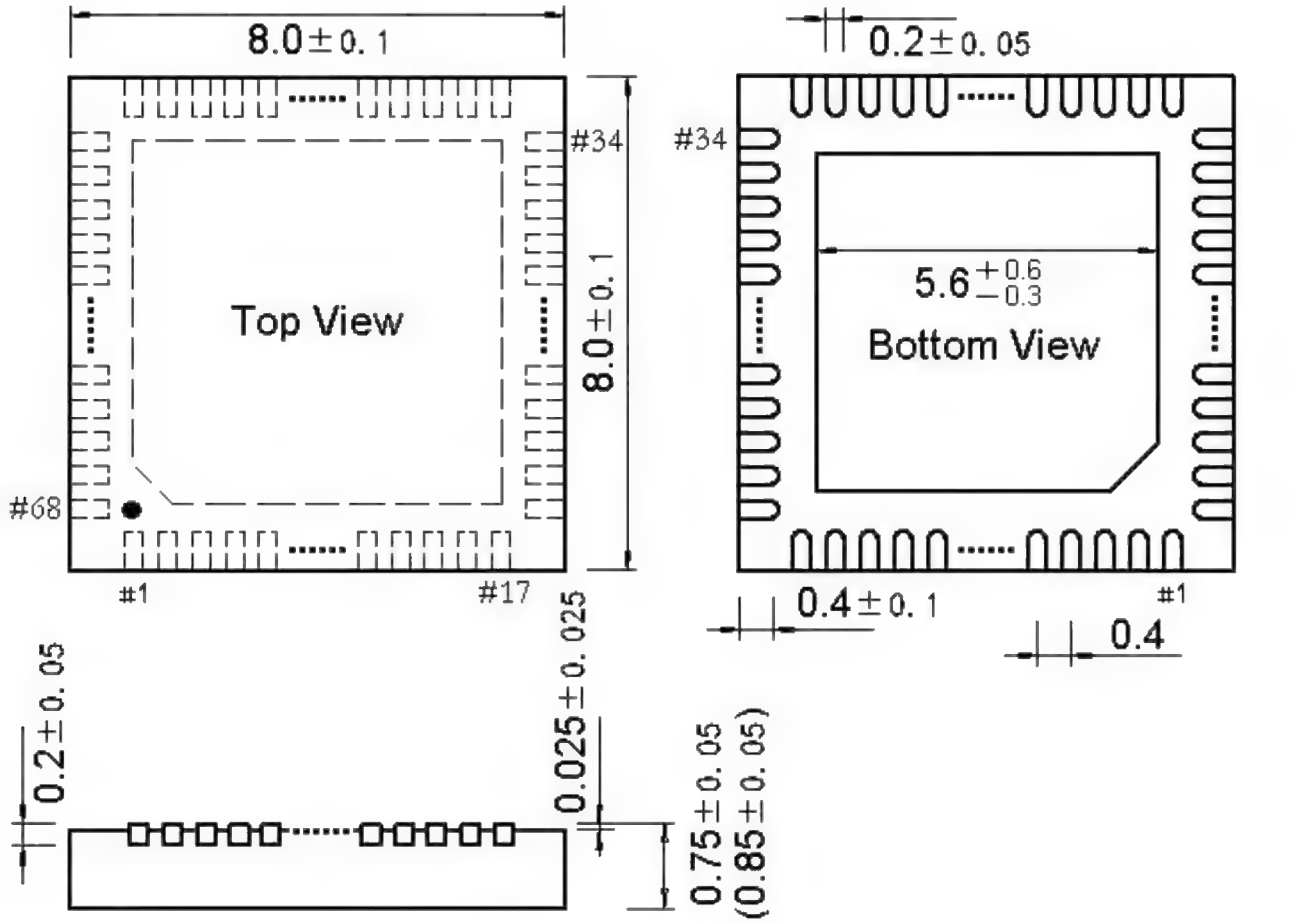
. **QFN64 (QFN64-8*8)**



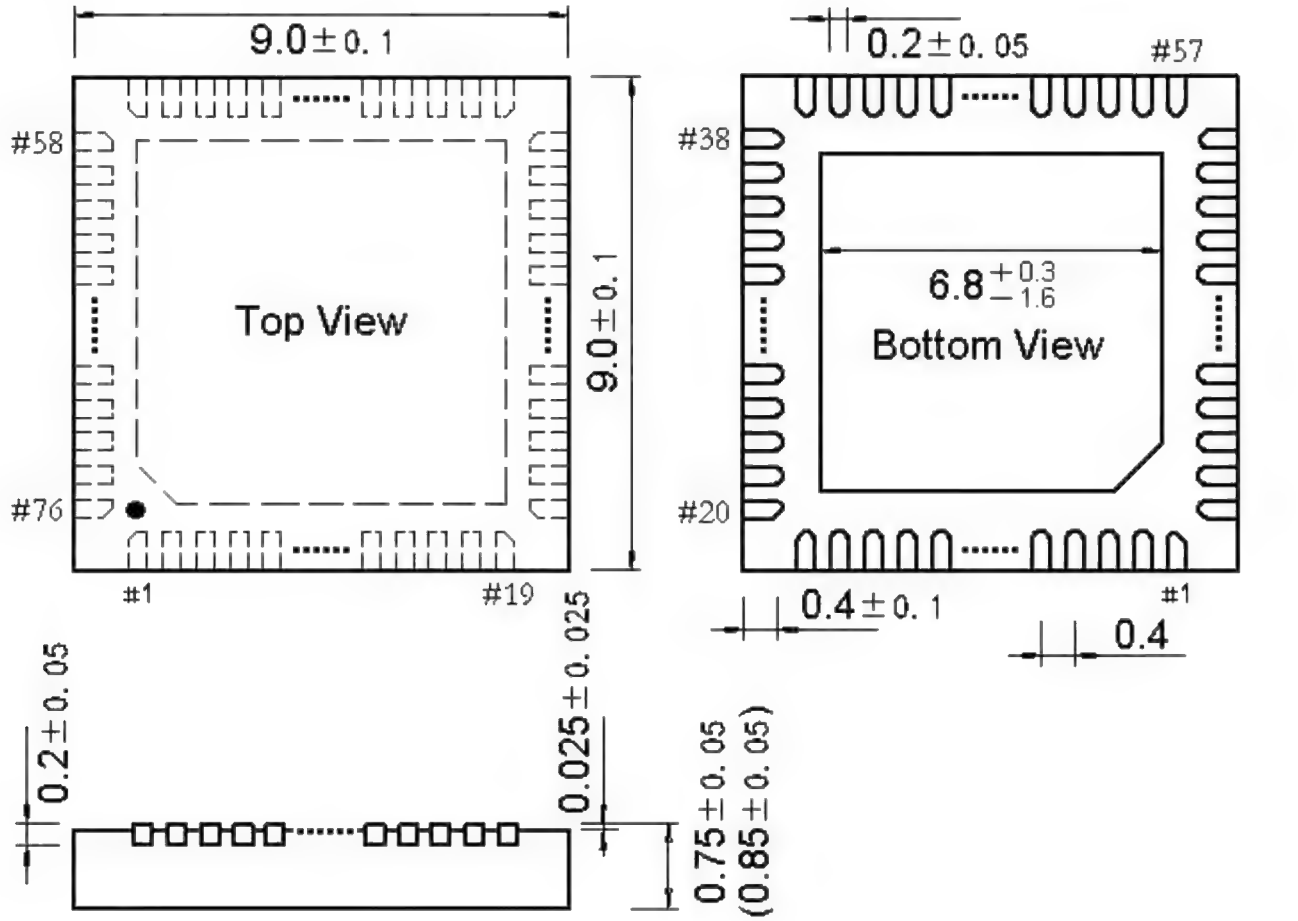
. **QFN64X9 (QFN64-9*9)**



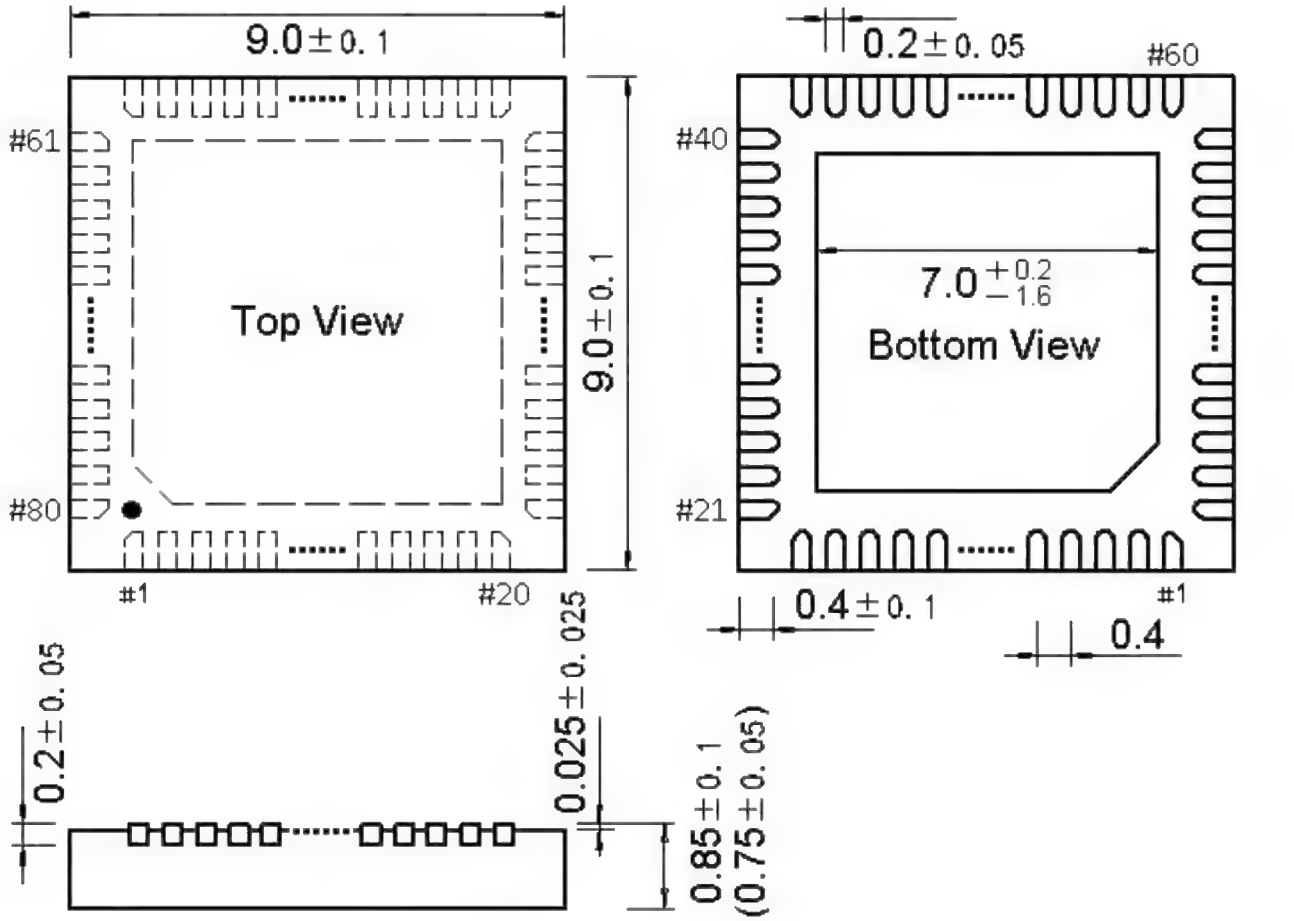
. **QFN68 (QFN68-8*8)**



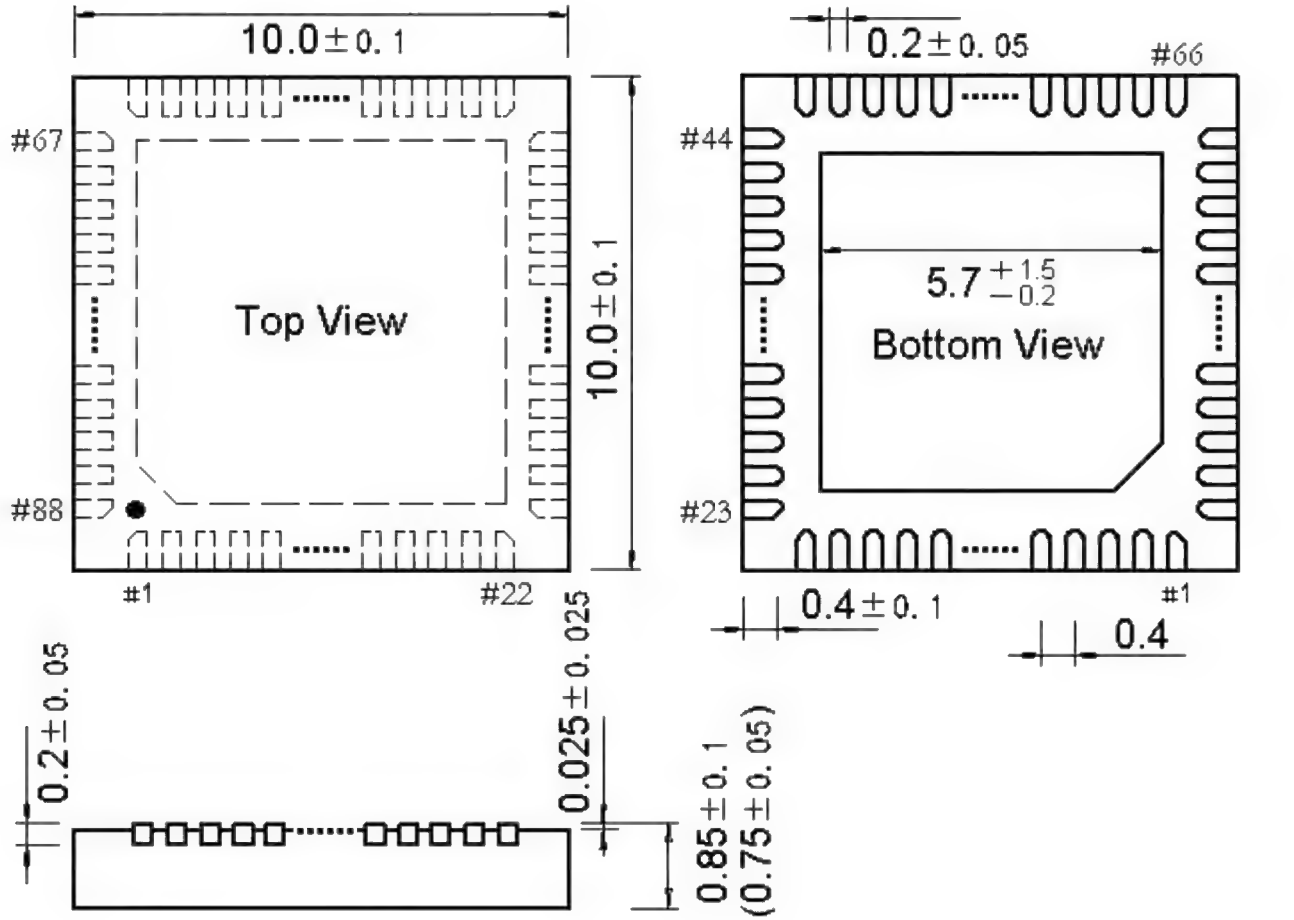
. **QFN76 (QFN76-9*9)**



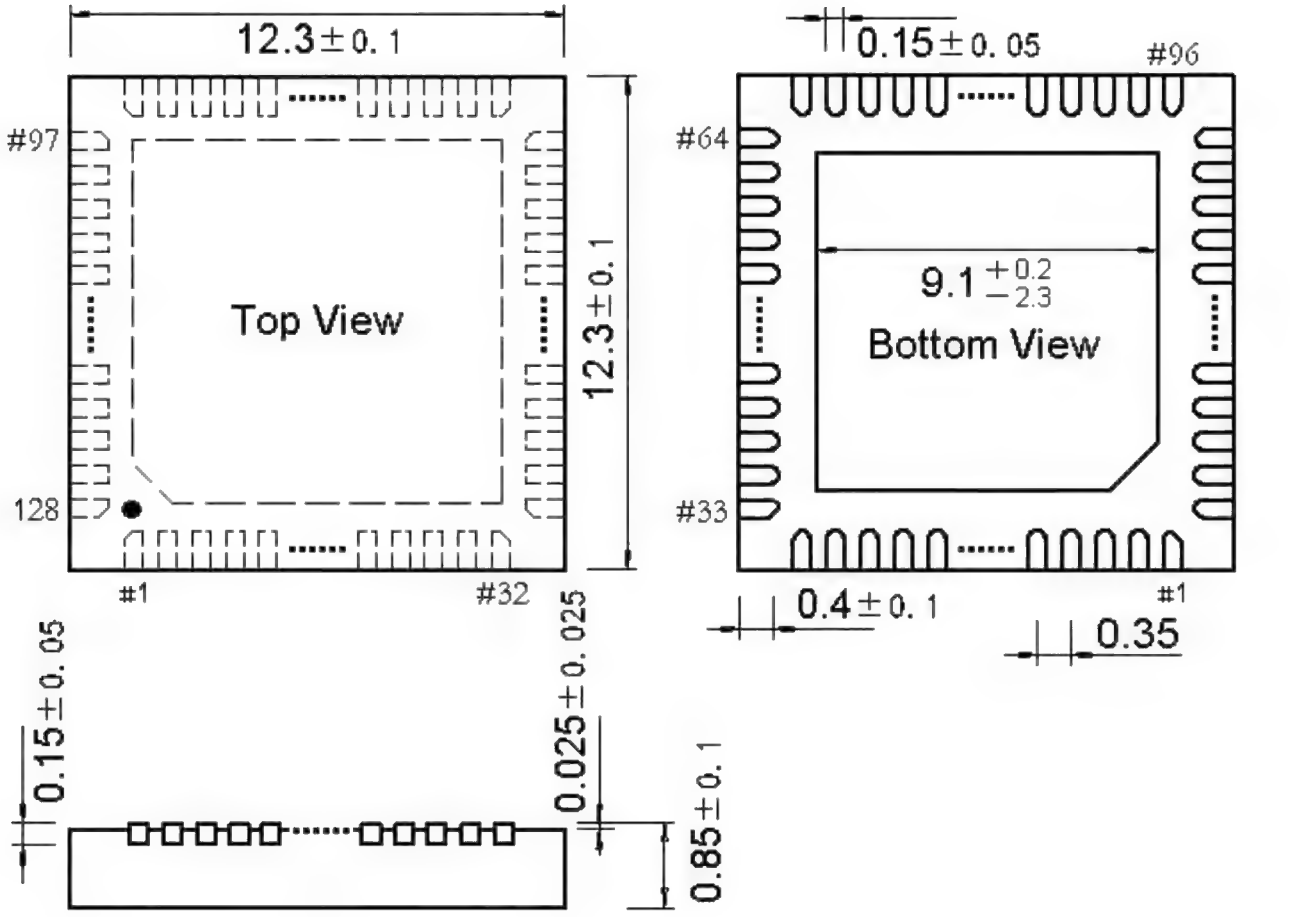
. **QFN80 (QFN80-9*9)**



QFN88 (QFN88-10*10)

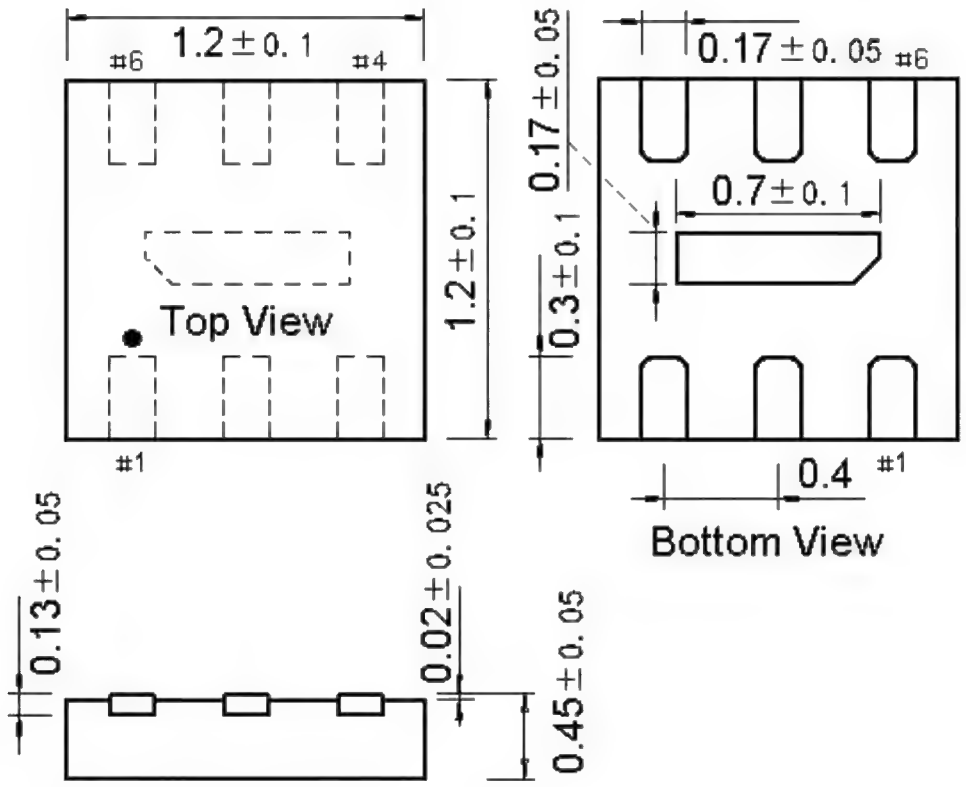


. **QFN128 (QFN128-12.3*12.3)**

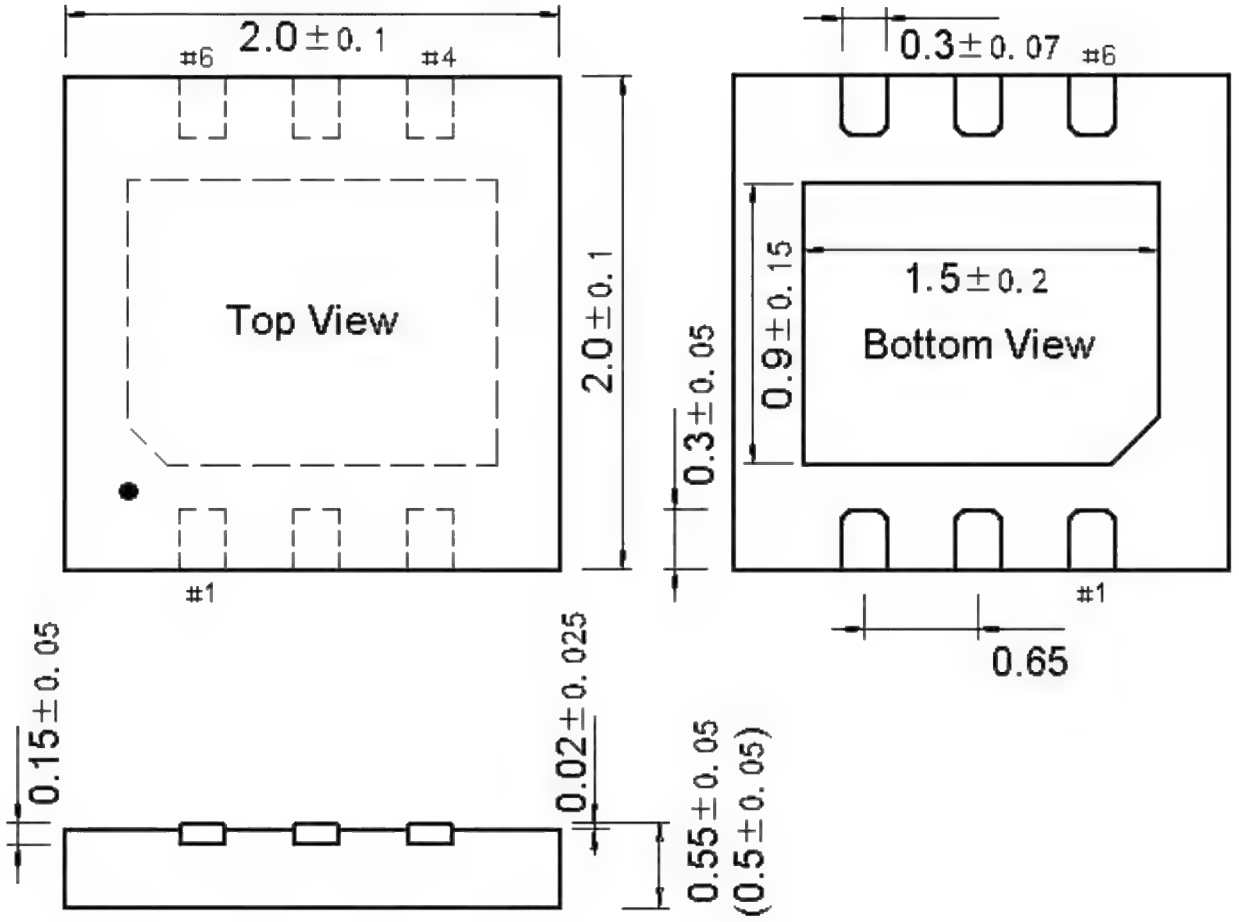


DFN Type

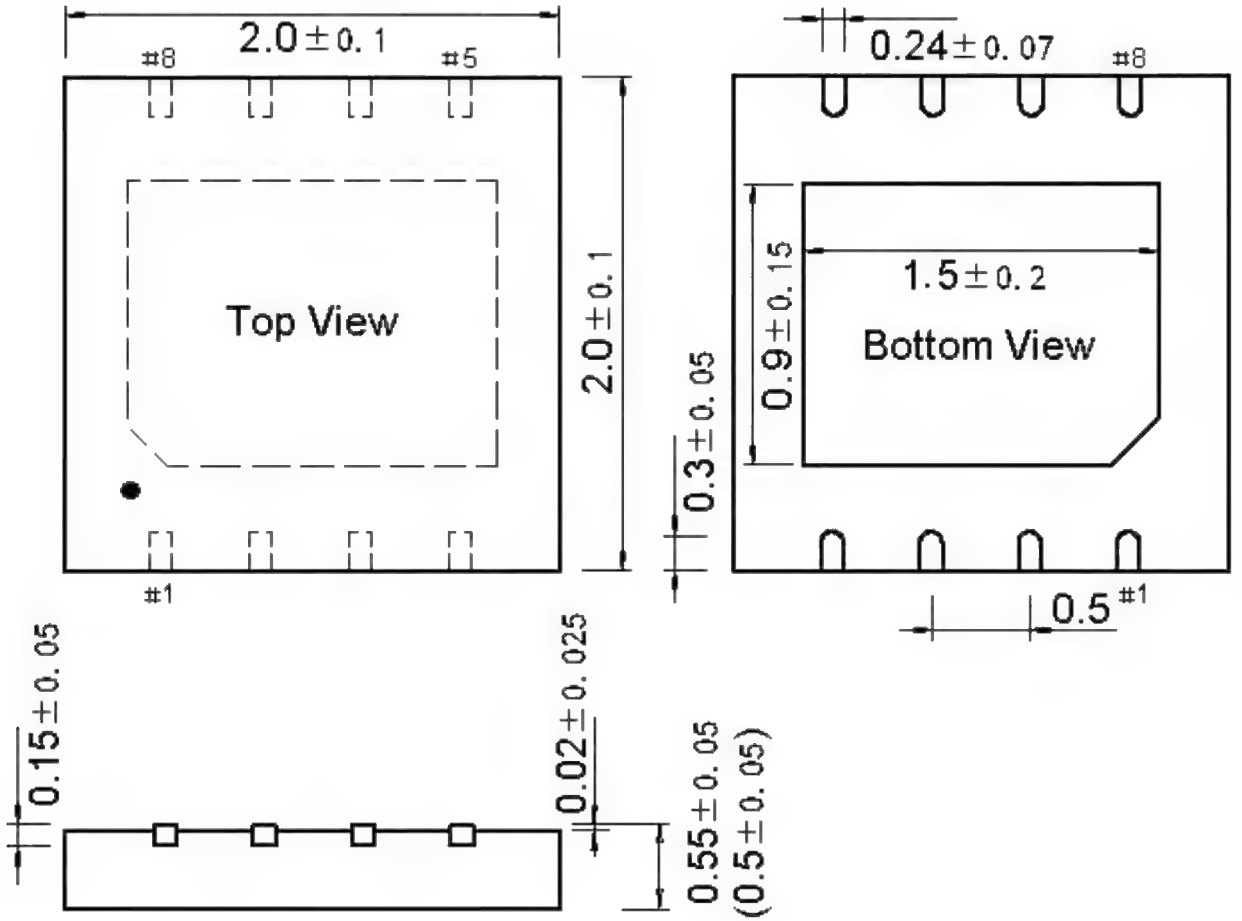
. DFN6X12 (DFN6-1.2*1.2*0.45-0.4)



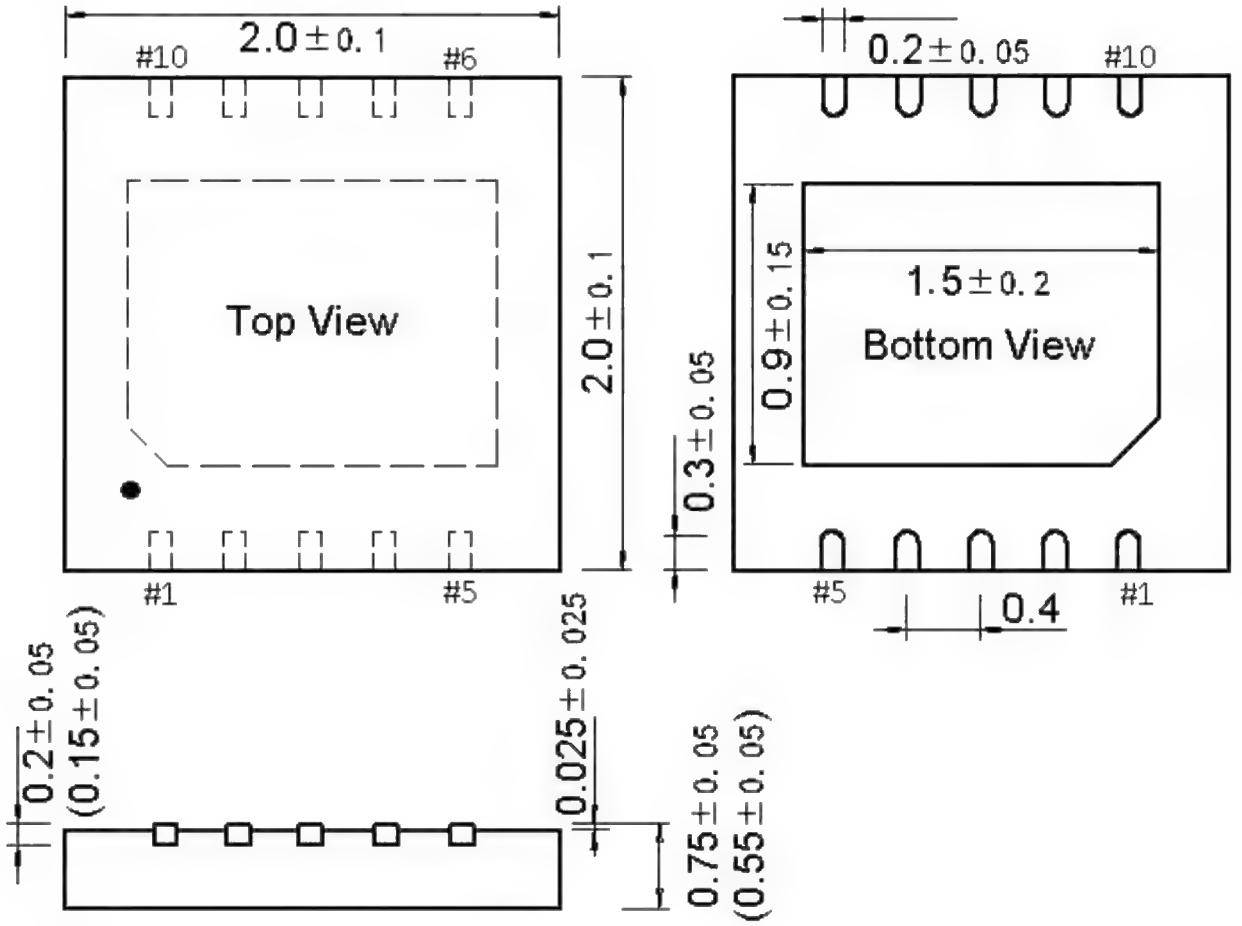
. **DFN6 (DFN6-2*2)**


2.0±0.1
#6
#4
Top View
2.0±0.1
#1
0.3±0.07
#6
0.9±0.15
1.5±0.2
Bottom View
0.3±0.05
#1
0.65
0.15±0.05
0.02±0.025
0.55±0.05
(0.5±0.05)

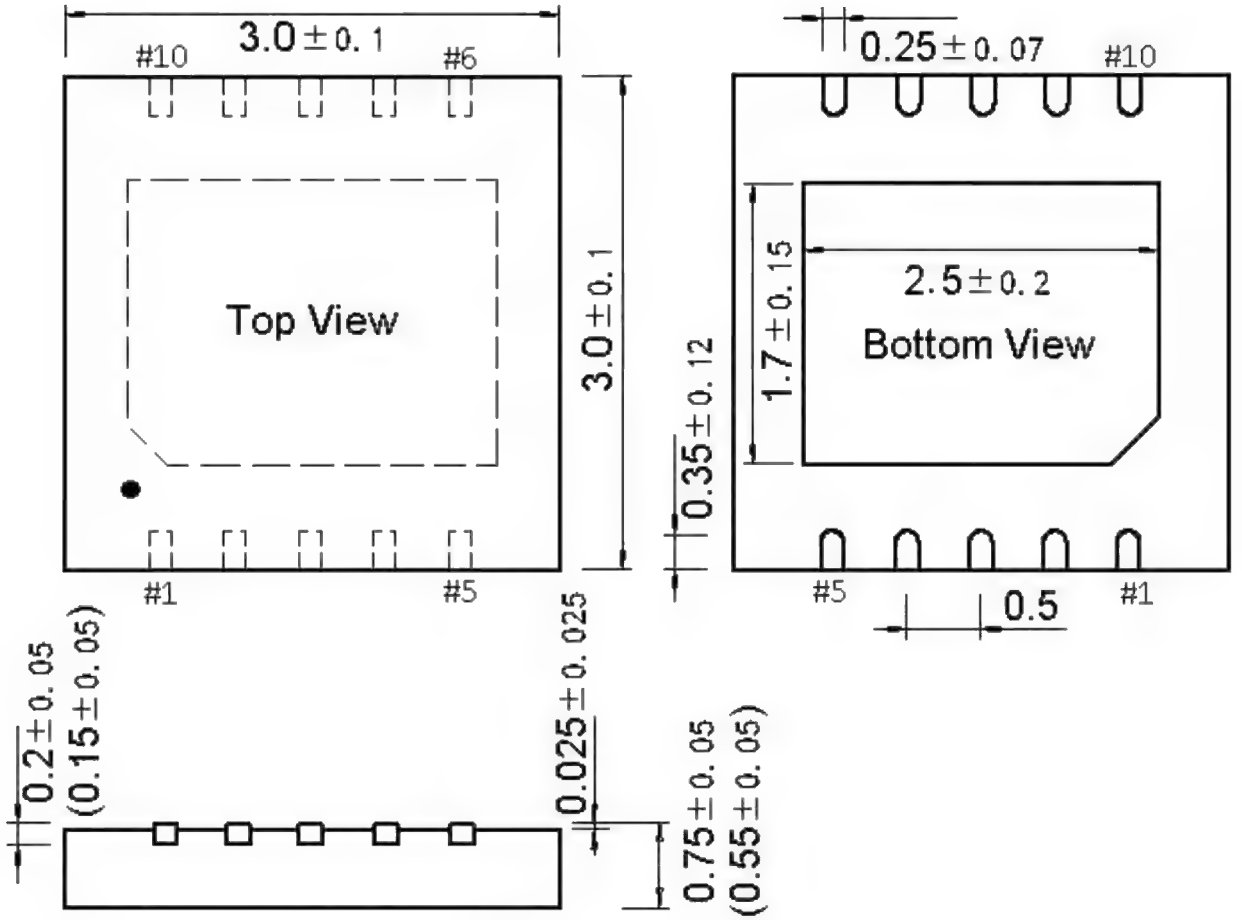
. **DFN8 (DFN8-2*2)**


2.0±0.1
#8
#5
Top View
2.0±0.1
#1
0.24±0.07
#8
1.5±0.2
Bottom View
0.9±0.15
0.3±0.05
0.5
#1
0.15±0.05
0.02±0.025
0.55±0.05
(0.5±0.05)

. **DFN10 (DFN10-2*2)**

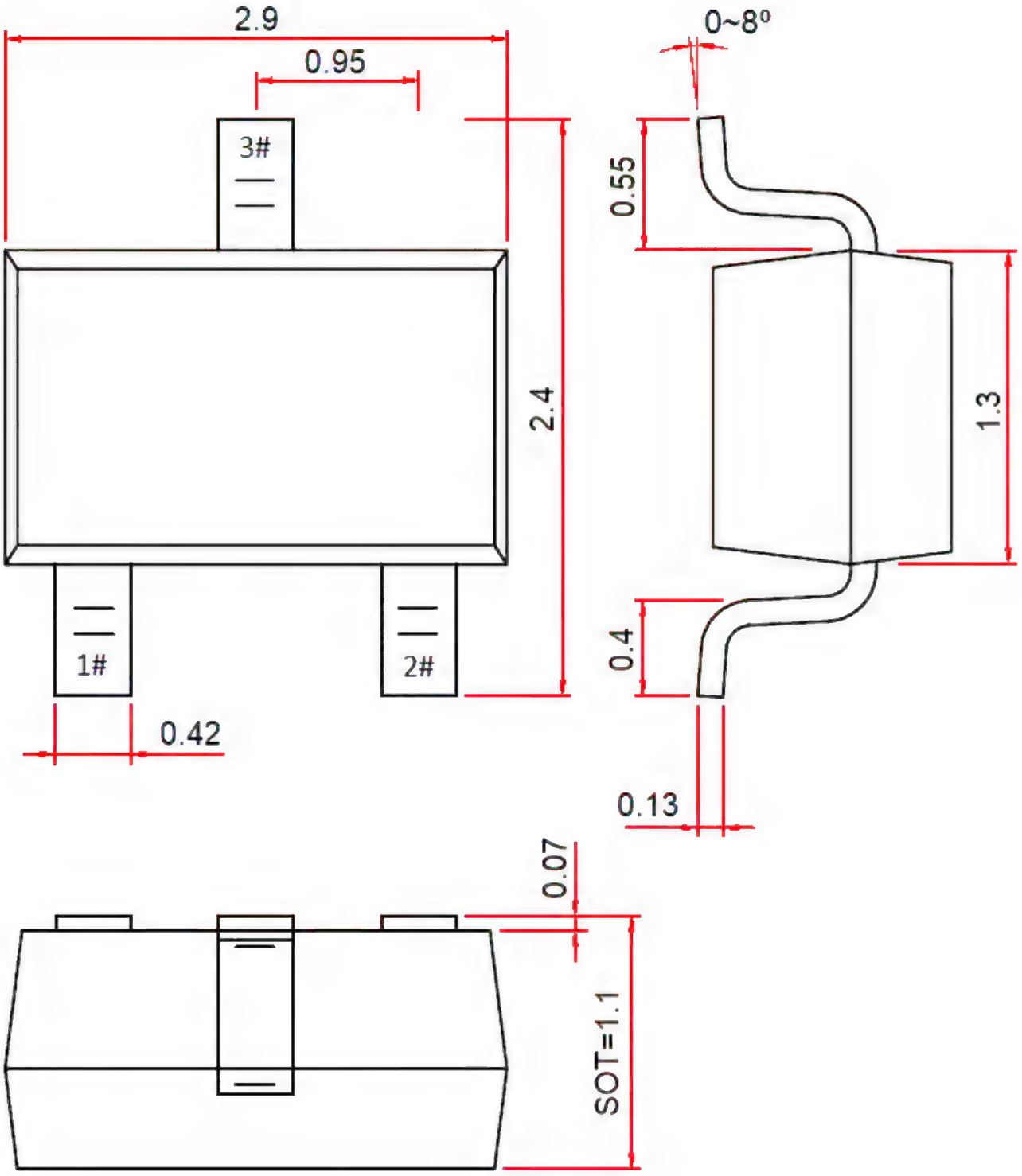


. **DFN10X3 (DFN10-3*3)**

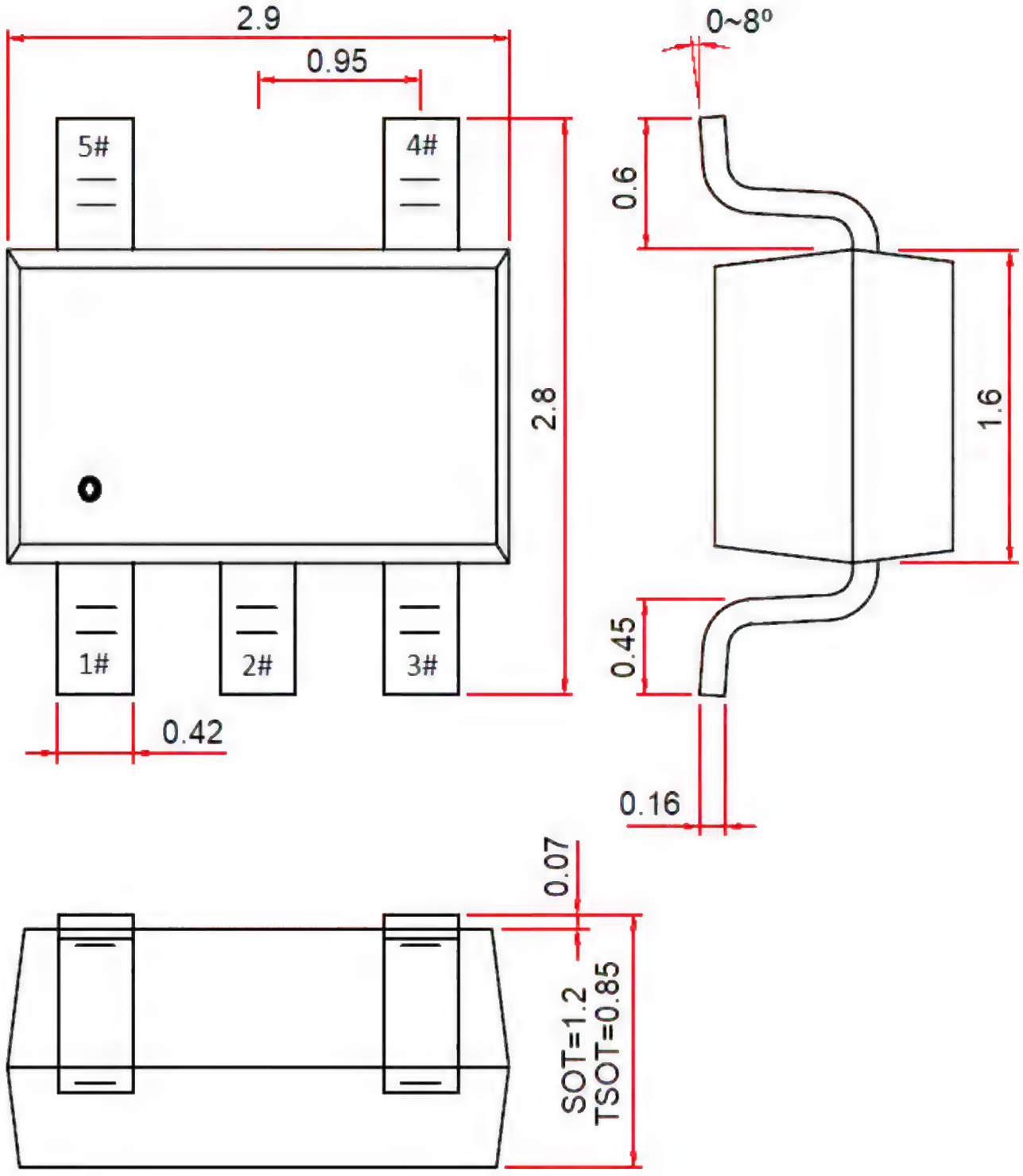


SOT Type

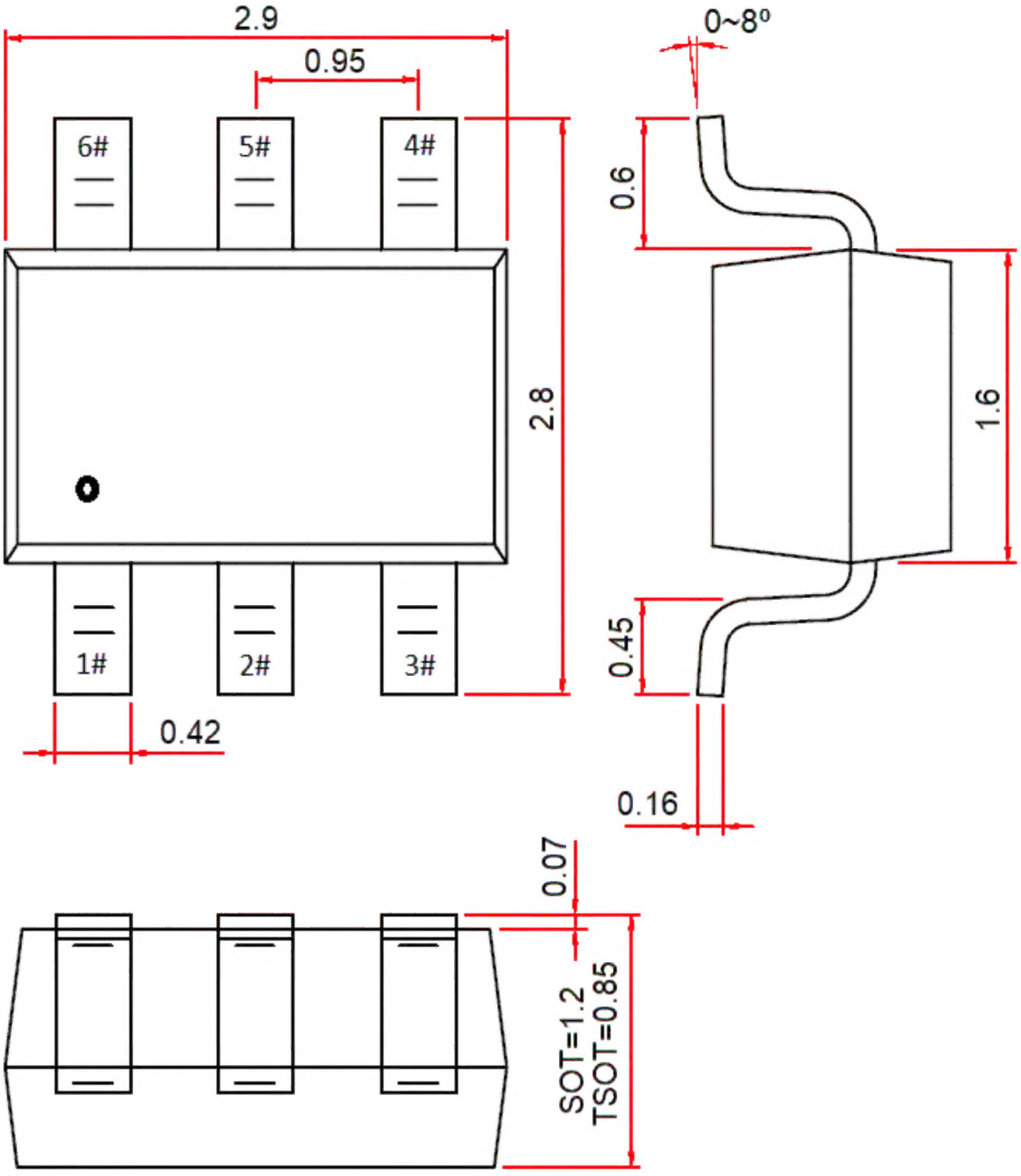
. **SOT23-3**



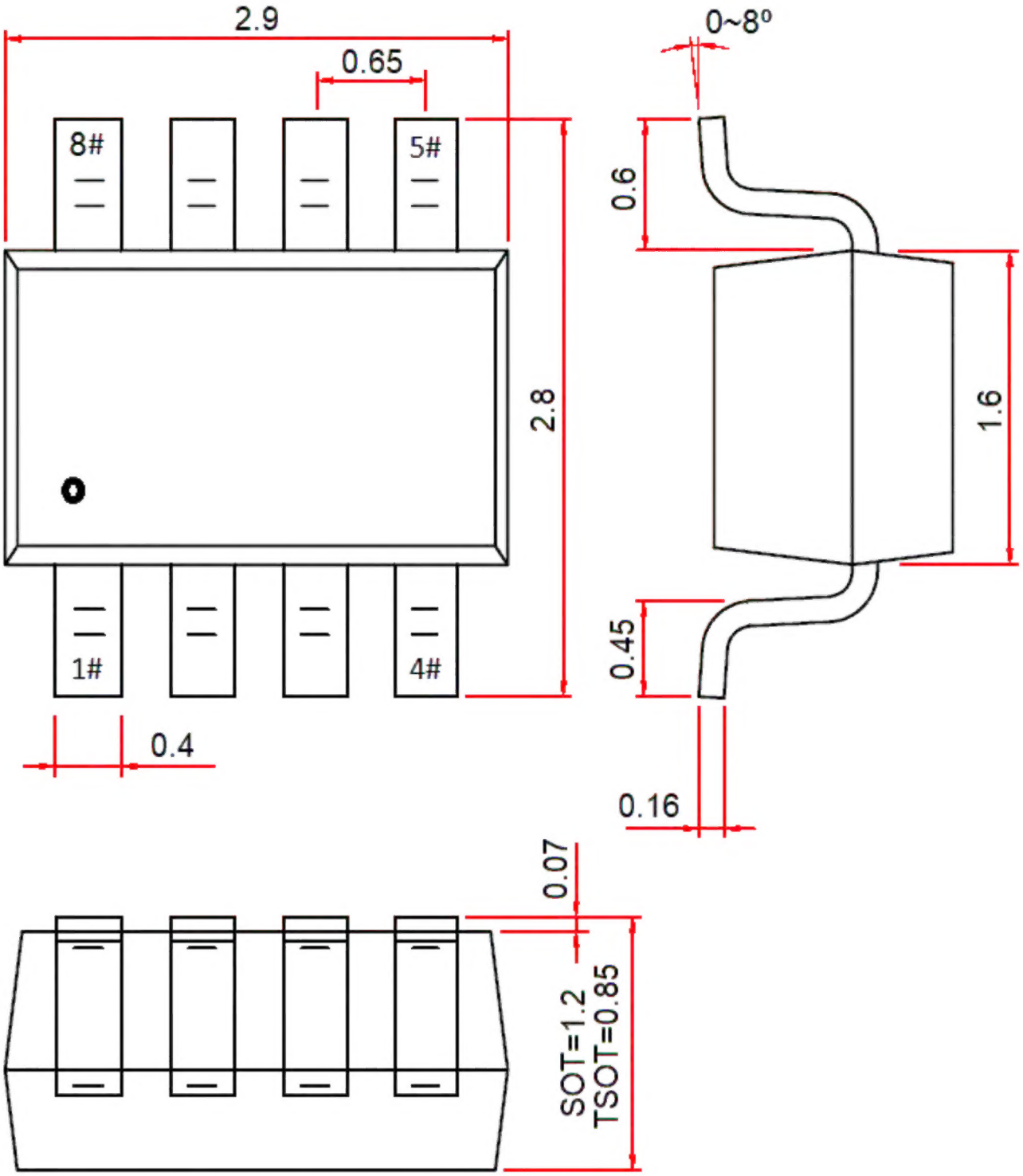
. **SOT23-5, TSOT23-5L**



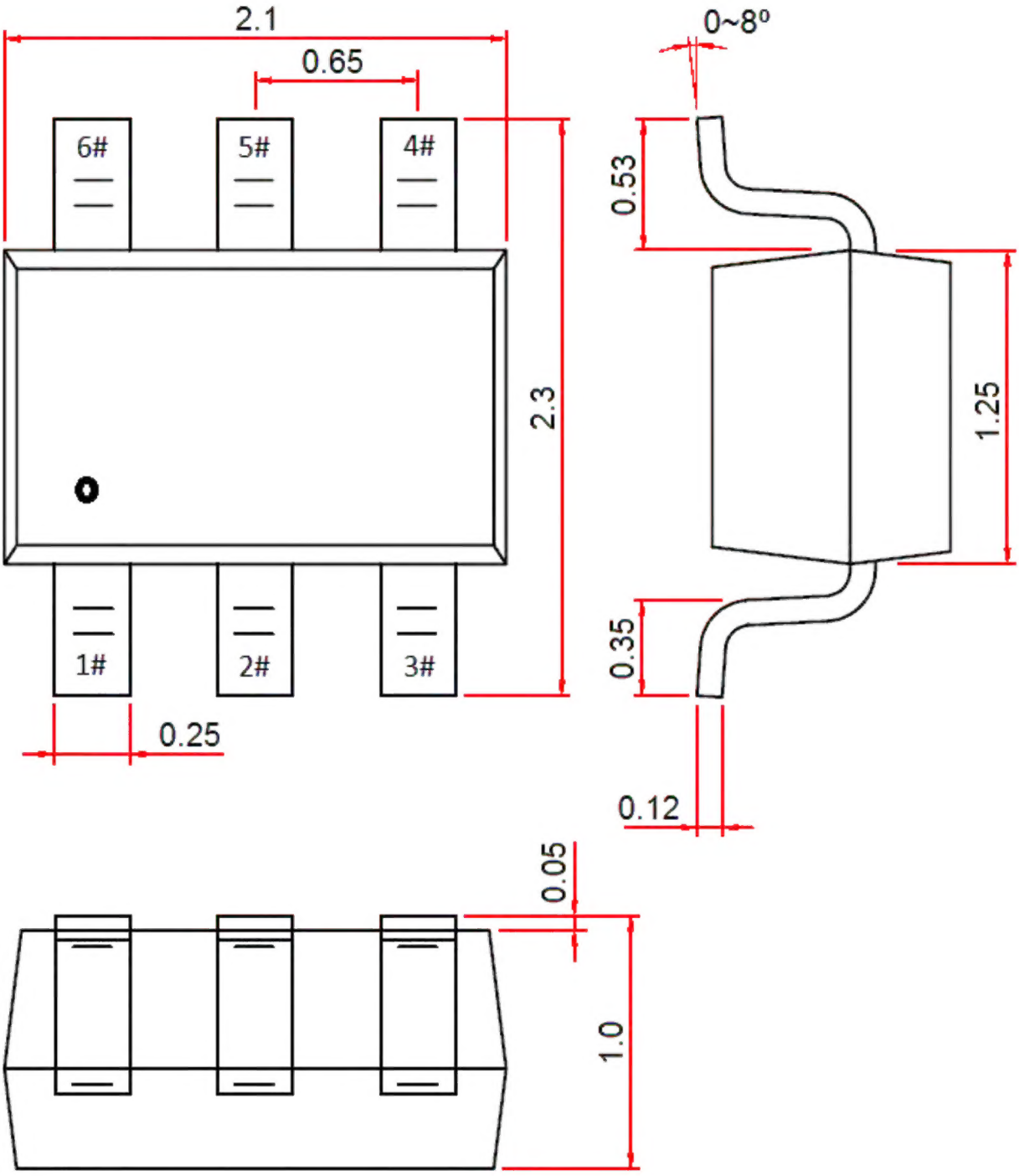
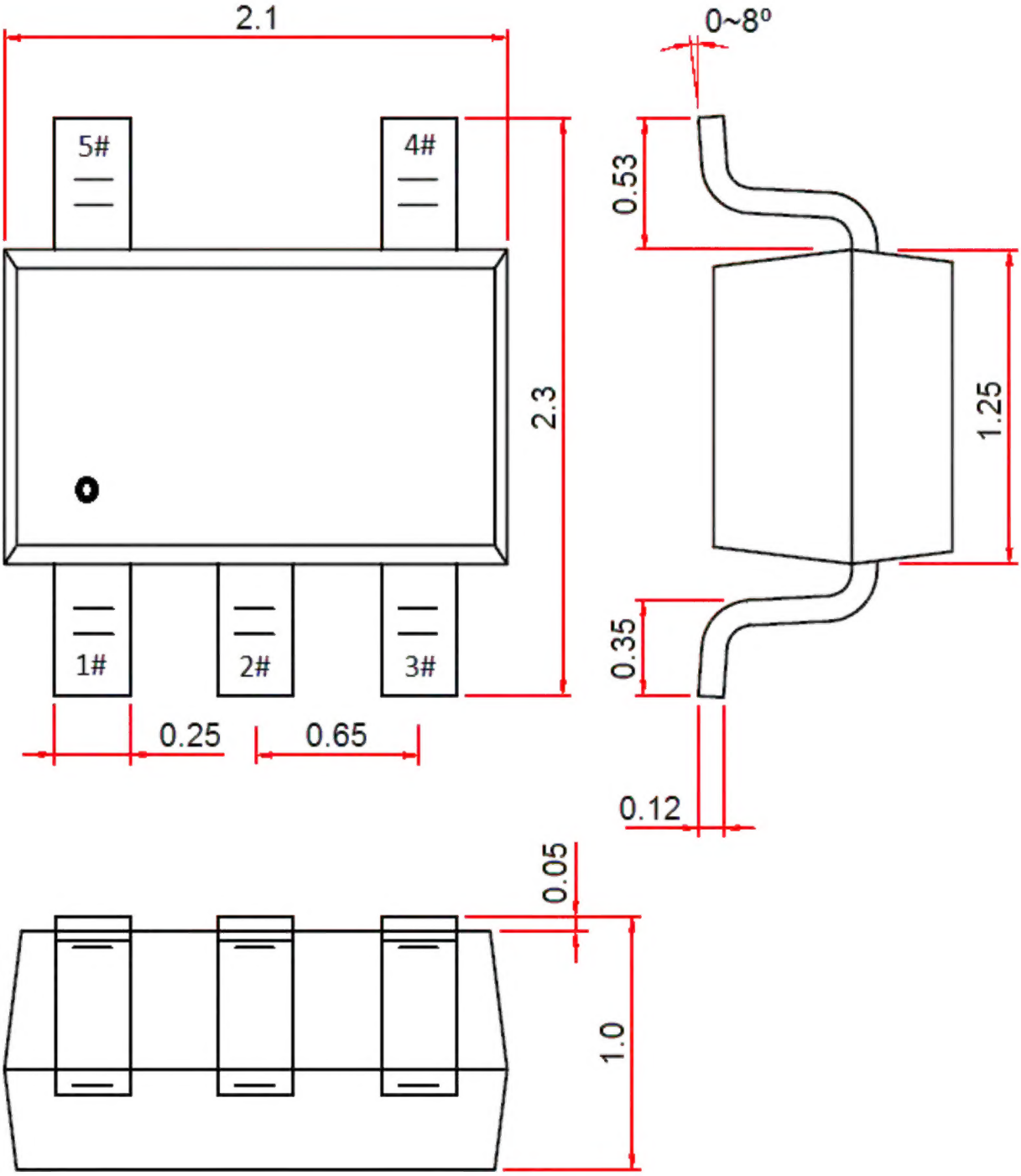
. **SOT23-6, TSOT23-6L**



. **SOT23-8, TSOT23-8L**



. **SOT363 (SC70-6L)**



. **SOT353 (SC70-5L)**